





COLONIAL BUILDINGS, CANNON-ST., LONDON, E.C.

Advertisements, Remittances, Subscriptions, Orders for Copies, and all communications must be addressed to "THE PUBLISHER" of THE CHEMIST AND DRUGGIST.

Cheques and Post-office Orders to be made payable to *Edward Halse*, and crossed *Martin & Co.*

No one is authorised to collect money without production of the Proprietors' lithographed form of receipt.

Receipts not forwarded for sums under 10s., unless the remittance be accompanied by a stamped envelope.

SCALE OF CHARGES FOR ADVERTISEMENTS.

One Page	£5 0 0
Half ditto	2 15 0
Quarter ditto	1 12 0
Special Rates for Wrapper, and the pages preceding and following literary matter.	

The above Scale of Charges will be subject to a discount of 10 per cent. upon Six, and 20 per cent. upon Twelve insertions.

Seven Lines and under	0 4 6
Every additional Line	0 0 6

Advertisements of Assistants Wanting Situations (not exceeding 12 words) inserted at a nominal charge of 1s. each.

All Advertisements intended for insertion in the current Month must be sent to THE PUBLISHER of THE CHEMIST AND DRUGGIST on or before the 12th, except Employers' and Assistants' Advertisements, which can be received up to 10 a.m. on the morning previous to publication.

OUR COUNTRY AND COLONIAL SUBSCRIBERS are respectfully requested to furnish any trade gossip that they may consider interesting.

Subscribers are requested to observe that, for the future, the receipt of THE CHEMIST AND DRUGGIST in a *Green Wrapper* indicates that with that number the term of subscription has expired, and that no further numbers will be sent until the same has been renewed. We issue the notice very respectfully, not that we distrust our Subscribers, but simply because we find it impossible to keep an immense subscription list like that we now have, extending to almost every town in the world, in order without an exact system like this.

An edition of THE CHEMIST AND DRUGGIST is printed on thinner paper expressly for foreign circulation. The Journal is mailed direct from the Office to its subscribers in every part of the world; but subscriptions may be paid and advertisements arranged with any of the following Agents:—

FOREIGN AGENTS.

ADELAIDE	Messrs. Faulding and Co.
BOSTON, U.S.	Office of "Boston Journal of Chemistry."
CALCUTTA	Bathgate and Co.
DUNEDIN	Kemphorne, Prosser, and Co.
MELBOURNE	Felton, Grinwade, and Co.
MONTREAL	Evans, Mercer, and Co.
NEW YORK	Mr. P. M. Sherwood, 85, Liberty-street.
PARIS	P. D. Orvis, 3, Rue Scribe.
PHILADELPHIA	W. M. Dickson, 619, Walnut-street.
SAN FRANCISCO	Messrs. Redington, Hostetter, and Co.

The following are the rates of Subscription abroad:—

Australia	7/6	Malta	7/6
Austria	8/6	Mauritius	9/6
Belgium	7/6	Mexico	7/6
British America	7/6	New Zealand	7/6
Brazil	7/6	Norway	7/6
Cape of Good Hope	7/6	Peru	8/6
Ceylon	8/6	Portugal	8/6
Chili	8/6	River Plate	7/6
China	8/6	Russia	9/6
Denmark	7/6	Spain	8/6
France	7/6	Sweden	7/6
German Empire	8/6	Turkey	8/6
Holland	7/6	United States	7/6
India	7/6	West Indies	7/6
Italy	8/6		

OUR COUNTRY AND COLONIAL SUBSCRIBERS are requested to furnish any trade gossip that they may consider interesting.

Editorial Notes.

ONCE more we have nearly reached that one midnight of the long twelve months, when the past and the future seem visibly to meet. The strong runner, 1871, like a courier charged with vast messages, will soon now reach the end of the stage appointed for him, but not for a moment's space will the endless race slacken. The world has never time to take stock. The great crowd of humankind must still rush forward and leave the dead past to bury its dead. Time's new messenger will lead the race, and on the way will scatter happiness and sorrow amid the train, as all his predecessors have done. New comers will join that train, and old ones will vanish from

it, but from year to year, and from century to century, that never resting flood of life presses onwards. It is well that it should be so; to look back, or to look forward either, though in certain senses incumbent on every wise man, is in other respects but time wasted. The former survey, too, is often painful, and the latter is sometimes fearful. But the moment for such a glance backwards and forwards is almost with us. We all take it as we close one year and commence another, and by so doing we hope to strengthen ourselves for the new stage we have to run. It is a happy concurrence that almost at this same time comes merry Christmas to remind us that our duty is not only to strengthen ourselves, but also to encourage others. If on Christmas day every man, woman, and child, in this sorrowful world could be made happy, what a blessed twenty-four hours it would be for all of us. May all try by kind words and unselfish deeds to ensure for ourselves and others a merry Christmas and a happy new year.

The illness of the Prince of Wales will not have been altogether in vain if it results in anything at all being done towards the removal of one of the well-known sources of typhoid fever. Whether it was so in his case or not, it is quite certain that the majority of the fifteen thousand deaths which are credited annually in this country to typhoid fever originate in the use of water contaminated with sewage. This is the penalty we are called upon to pay for our culpable indifference to one of the most pressing sanitary and economical problems of the day. To put it moderately, England pays a toll of ten thousand lives every year rather than rouse herself to deal determinately with the sewage question. That which in its proper place would bring forth seed to the sower and food for the eater is far worse than wasted: it is deliberately spread forth to scatter death and disease, and one knows not to how great an extent it fulfils its mission. Inquiries, select committees, royal commissions, and experiments have been going on long enough, and we still wait for some perfect plan to "turn up," faithfully paying our rent of humanity year by year. Surely it would be better to adopt an imperfect system than to continue like this. The great chemical discovery of the utilisation of sewage may come in time; but, until it does come, it would be well to institute vigorous measures which would spare to some extent so lamentable and so preventable a sacrifice of human life.

MANY of our readers in London and the provinces will make a note in their diaries to keep themselves disengaged for January 17th. That is the date fixed for the brilliant *finale* of the chemists' brief season—the Chemists' Ball.—[N.B. Those who do not intend to go had better keep this number of the "CHEMIST AND DRUGGIST" out of the reach of their wives and daughters, who, however, we hope will ask for it as usual.]

In our correspondence columns will be found some interesting letters from Professor Ebert, of Chicago, Professor Attfield, of London, and Mr. Brady, of Newcastle-on-Tyne respecting the Chicago College of Pharmacy, which in the recent tremendous conflagration, was burnt to the ground. All the world sympathised with gallant Chicago, and in the day of terrible distress help was given both freely and promptly. The present is a precious opportunity for the chemists and druggists of England to show their respect for the chemists and druggists of America. We appeal to the *esprit de corps* of our British readers, asking them to aid in the restoration of the library and museum of the Chicago

College of Pharmacy. And we promise them that in a very few years that college will not only have regained the vantage-ground which it lost by fire in 1871, but will have secured such a position that every English pharmacist will be proud to have the remembrance that he was one of the workmen who gave his help, when help was valuable. Money, books, or museum specimens may be sent to Dr. Attfield, but no money is to be transmitted to Chicago. The Chicago pharmacists themselves, notwithstanding their own great losses, will provide a building. In addition to the list of donations which we publish elsewhere, we are requested to acknowledge the following:—

	£ s. d.
H. B. Brady, Newcastle-on-Tyne	5 5 0
A few Assistants and Apprentices at Leicester	1 4 0
W. D. Savage, Brighton	1 1 0
S. C. Betty, Regents Park	1 1 0
Battley and Watts, London	5 5 0
J. T. Fema, Westminster	0 5 0
Roberts, Dale and Co., Manchester, Specimens of Chemicals	
John Nesbit, Portobello, Balfour's "Manual of Botany"	
G. B. Clarke, Woburn, <i>Seapular Lexicon, Graeco-Latinum.</i> 2 vols.	
“ “ “ Morell, T., <i>Lexicon, Graeco-Prosodiacum,</i>	
Maltby.	

WE fully agree with our correspondent "V." that the income tax presses with undue severity on the middle classes, and we shall be glad to see any movement emanating from the traders of the country, having for its object the exercise of all constitutional means to influence the Government, so that the incidence of taxation may be more fairly adjusted. It is quite evident that a trader with £200 a year is far more severely punished by the 6d. in the pound than is the case with men with larger incomes, although the proportional burden is exactly the same. And yet a trader with £200 a year is not likely to think himself very badly off if he compares his lot with many around him. But the £5 which he is called upon to pay leaves its scar for many days to come. Naturally the rich man who pays his proportion for thousands needs not to deny himself of the smallest luxury. Why should he who would lose the least by the country's ruin be the heaviest burdened for the supplies? Should there not be a sliding scale whereby the income tax might be more fairly adjusted? for it is hardly likely that any Ministry will altogether abolish it until the day when swords are beaten into ploughshares and war is learnt no more. It may, perhaps, be hoped that if Mr. Bright should return to Parliament next session—and it is expected that he will—he will take up this subject, and for once act as the champion of the middle classes. But whether he will or not, it is we hope certain that there is so much sympathy in Parliament with the small taxpayers that another budget, like that of 1871, will not only cover the Chancellor of the Exchequer with complete disgrace, but will also settle the prospects of a Government which cares so little for its humbler subjects.

AMONG our provincial reports this month will be found an abstract of a valuable chemical paper read by Mr. Tanner to the Liverpool Chemists' Association, in which he described his process for the manufacture of nitrite of amyl. There seems no doubt that this process is superior to that usually employed, both in respect to simplicity and economy, provided that the precautions suggested by Mr. Tanner, are attended to. A paper of a lower scientific standard, but of more general interest to chemists and druggists, is that of Mr. Wilkinson, on some difficulties met with in dispensing. The publication of this paper in the *Pharmaceutical Journal*, called forth some indignant protests against Mr. Wilkinson's implied belief that in certain cases it was right for the dis-

penser to get round a difficulty instead of climbing over it. It is no secret, though it does not often appear in print, that as a matter of fact dispensers are compelled to resort to all kinds of devices to approximately fulfil the requirements of the prescribers. The substitution system may perhaps have a tendency to debase the moral standard, but there are cases when the dispenser has a very big excuse indeed. Mr. Wilkinson has sent us a few remarks on this discussion, which we append. He says:—

" Since my paper was read, I have been taken to task severely on account of this paragraph, and have been told that extracts *ought* to be of the proper consistence for making pills, that if they are not so, they ought to be *made* so, and then there would be no need for addition or substitution. This is no doubt correct in theory, but unfortunately not quite so easy in practice. Very few extracts, if made the proper consistence for forming into pills, will keep in that condition for any length of time; most of them either speedily dry up and become too hard for manipulation, or attract moisture and become too soft, so that we are almost obliged to add something, for we cannot harden them at the time of using, and really the difference in strength between *Pulv. Hyos.* and *Ext. Hyos.* is so slight that it is scarcely worth naming, whilst it is a question whether more injury might be done to the extract in drying than would make up for the difference: besides that, pills made with hardened extract and blue pills will go soft with keeping (at least with some samples of blue pill), and the powder prevents that to a great extent. As to essential oil, everybody knows that if we put more than a certain proportion into a pill-mass it works out in the manipulation, unless some 'dodge' be practised, and I cannot perceive that it makes very much difference (except as a salve for the conscience) whether the excess of oil is worked out on the fingers or pill machine, or left out in the first instance, whilst the latter method certainly makes the most satisfactory pill. I may say also, that by using a little *Pulv. Gent.* in the place of *Ext.* in the above recipe we are able to get in more of the oil of cinnamon than we otherwise could do."

W. W.

AN ACT was passed in the last session of Parliament abolishing the then existing Poor-law Board, and transferring its duties with others concerning public health to a new board called the Local Government Board. Mr. Stansfeld, the President of the Poor-law Board, was made the President of the Local Government Board. In this new office were vested many of the duties theretofore pertaining to the Medical Department of the Privy Council, as, for example, vaccination and the prevention of disease. This has created an impression among chemists and druggists in many quarters that the oversight of the Pharmacy Act was also transferred to the Local Government Board; but such is not the case. From an official letter written in reply to our inquiry, we learn that the duties of the Privy Council under the Pharmacy Acts are not transferred to the Local Government Board. In most other respects, the duties of the Medical Department have been transferred to that office.

IN an American pharmaceutical journal we notice an advertisement of "Aluminium Grain Weights." The advantage is that aluminium being so extremely light, the weights are necessarily of a less microscopic, and consequently of a more convenient size than if made of a heavier metal. With regard to shape, too, we notice that the maker of these weights, Mr. Henry Troemner, of Philadelphia, has adopted a suggestion which we believe was first made in this journal, namely, that it would be a convenience if these small weights were made of various shapes, so that the dispenser could at a glance seize exactly the one he wanted. These aluminium weights are made of small bars, a straight bar representing the one grain, and from that to six grains each weight is indicated by the number of sides presented.

At the Court of Common Pleas, on December 4th, a jury came to a somewhat curious decision on the subject of apprenticeship. Mr. Hudson, a chemist, Haymarket, was unable in this instance, through ill health, to complete the term of instruction for which he had taken his apprentice. In that case, or indeed, under any circumstances which *bonâ fide* disable him to fulfil his contract as far as the time specified is concerned, is he bound to repay the *whole* of the premium which has been paid by the apprentice? This decision says the apprentice is in such a case entitled to the return of his entire premium. It is of course evident that an apprentice's services are worth less during the earlier than during the later years of his term, and the labour of the master to instruct him is clearly in inverse ratio to the value of his services. Presuming that the failure to fulfil the contract arises from circumstances beyond the control of the master, as for example, death or illness, we cannot regard the decision we have referred to as in absolute accordance with justice.

WEIGHTS AND MEASURES.

PROFESSOR REDWOOD, at the December meeting of the Pharmaceutical Society, read a paper in which he advocated the adoption of certain changes in the designation of weights and measures in any new edition of our Pharmacopœia, and in which he pointed out certain difficulties in the way of such a change, and suggested its balancing advantages. Dr. Redwood was a very hard working member of the Pharmacopœia Committee, and his intimate association with all matters of pharmacy for so many years past place his opinion higher than that of any other critic on this subject. His plan is described in our report of the meeting on another page, and it will be noticed that while Dr. Redwood advocates it partly as an improvement of the system now in vogue, he has a still stronger reason in the fact that it would pave the way for the gradual introduction of the metrical system into the British Pharmacopœia. We may, we think, with the utmost respect for Professor Redwood, but in the name of all British chemists and druggists, protest against this piece of mistaken kindness. The practical result of the introduction of an intermediate system, whereby proportions were to be indicated, would be extreme confusion, and would serve no useful end whatever. We doubt not that a decimal division of our weights and measures, must come ultimately; but it is plain enough, that at least fifty per cent. of the inconvenience of the alteration would be saved by changing to such a system straightway than by doing so in two acts. In a few years time there will be scarcely any educational difficulty in the adoption of the metrical system in our Pharmacopœia. Nearly all chemists and druggists will be familiar with it, and a few days' experience will render it clear to every one of them. But there will be strong practical objections to such a course until the Legislature shall see fit to introduce it thoroughly in our coinage as well as in the weights and measures of commerce generally. With a decimal system of numeration which, as a consequence of education, is natural to every civilised inhabitant of the world, it is perfectly wonderful how the great variety of standards in weights, measures, and coin, have secured their positions. It is only explainable on the theory that after all ten is not really the eternally true standard of numeration. It is far too deeply rooted with us now to suppose that it can ever be displaced, and it holds its position so firmly that it is scarcely possible, even in an abstract way, to consider the claims of any other number to the standardship. But fairly

considered it becomes evident that *eight* would have been a far more convenient standard figure than *ten*. It is divisible in integers down to unity, while its more successful rival can only be once divided without resorting to fractions. The readiness, too, with which the young mind recognises the value of the fractions $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{8}$, as compared with the struggles which occur with $\frac{1}{5}$, $\frac{1}{250}$, $\frac{1}{125}$, is another way of expressing the superiority of eight to ten as a standard. To compare the two fairly, it is necessary to dismiss from our minds the representatives eight and nine, and to perceive that that which we now term eight would have to be represented as ten. Our present sixteen would become twenty, and sixty-four would be one hundred. The mind naturally conceives the idea of halving any measure again and again. But it cannot without an effort conceive the process of *tenths* the same. Take a plane circle or a square. How easy seems the process of dividing either into eight equal parts, but how difficult to divide them into ten. Against this undeniable argument what have the believers in the divine right of ten to urge? This, that we have each ten fingers and ten toes, and they assume that it has therefore been natural and reasonable to count by tens. Surely the toes may be dismissed; no one would ever dream of counting by them. The use of the fingers for counting is nearly as problematic, and if the primeval savage did use them it would seem extremely likely that he made four his standard, for the thumb seems well placed to represent the total attained by the fingers. There is another argument in favour of eight, a rather fanciful one it is true, but one not entirely without force. If eight were represented as ten, it is clear that we should have but seven instead of nine numerals as at present, and in a sense seven would thus become the perfect number, a title which it has claimed since the first week in the world's history.

This discussion of the abstract superiority of an octal over a decimal system must be regarded as merely interjectional. Ten is, and ever will be, the standard figure of our numeration. This being the case, the convenience in calculation, which must result if the standard of all other weights and measures were assimilated to it, is quite evident. That this convenience would enormously outweigh the temporary awkwardness of the change seems to us a self-evident proposition; and therefore, we shall gladly hail the day when all our weights and measures are brought into this correspondence with our system of figures. Tentative legislation in this matter is useless; piecemeal efforts would be worse. The first is illustrated by the entire failure of our florin coinage to accomplish the objects expected from it. The florin has never been looked upon as a tenth part of the sovereign, but has always been a two shilling piece from its first days until now. The object desired when florins were coined was that they might to some extent gradually pave the way for a decimal system of coinage, just as Dr. Redwood proposes now to pave the way for a metrical system of weights and measures. So far as that object is concerned, the result has been perfect failure. Not one man in a thousand ever counts a pound's worth of florins in the manner intended. He reckons them according to their value in shillings, counting each piece as two. On the other hand, it does come very natural to the mind to regard a sovereign as being worth eight half crowns.

Then, again, the Act of Parliament which legalises all contracts and commercial transactions made in terms of the metric system, is nothing more than a curiosity. One is inclined to ask what there was illegal in buying or selling a kilogramme of sugar formerly, if the dealer and the customer had agreed to make such a transaction. The employment

of the metrie system in our Pharmacopœia, before the same was applied to the rest of our weights and measures, would be a specimen of piecemeal legislation, and in such a case mistakes, misunderstandings, and inconvenience would be the continual result.

From these considerations it seems to us that the plan proposed by Dr. Redwood, whatever its intrinsic merits may be, should have no chance of ever obtaining a concrete form. If he had suggested it as a rival to the decimal system, there would have been a comprehensible basis for discussion; but regarded only as a stepping-stone to such a system which he doubtless, like others, looks upon as the final solution of the question, his proposition is admittedly one which has in it no prospect of permanence, which is, in fact, the creation of two revolutions instead of one.

CHEMICAL CLASSES.

IT has often been remarked that it is not possible to make people virtuous by Act of Parliament, but our legislators have great confidence that they will be able to ensure a certain amount of learning by such a process. The Education Act of last year is coming into operation gradually—very gradually—and one day the curse of perfect ignorance, it may be hoped, will be swept from our land. The Pharmacy Act had a much narrower scope, but, like its more gigantic successor, its educational results must of necessity be slow. At this very time there is a wide-spread complaint that notwithstanding the compulsory clauses of the Act, pharmaceutical apprentices are blind to their own interests, and will not come forward to avail themselves of the advantages so generously offered in many large towns, Manchester for example, for their assistance. Nevertheless, they must learn something of science in one way or another, for without a sound knowledge the examiners will never give them a certificate, and without a certificate the law will not allow them to own a chemist's shop. It remains, therefore, clear that either in solitude or in classes chemists' apprentices must acquire a sufficient quota of chemistry and botany to enable them to get through their examinations. It is wrong, we know, thus openly to describe the end of such requirements, but in most cases such is the fact, without the shadow of a doubt, and no harm can come of acknowledging it. Whatever may be the case with botany, it seems to us quite certain that the thorough study of chemistry can be far best promoted in a class, and with much greater pleasure, than in the solitude of the back room. We make no attempt to invent a universally applicable pharmacy-elevating machine or system, but we would earnestly urge on students, wherever it is practicable, the establishment of a class for chemistry. It is as simple as possible, and its interest and value will soon be apparent. Take, for instance, a town of ten, twenty, or thirty thousand inhabitants, and say there are from six to twelve chemists' apprentices there. Cannot two of these get together and arrange the preliminaries? Some arrangement might be come to about a room, and probably other youths in the same town would be glad to avail themselves of the opportunity to learn, and thus the expense would be somewhat lightened. We would not recommend that a subscription should be raised from the masters. Be independent if possible, though for any aid voluntarily given be thankful. A little self-denial now for the sake of mental improvement will be remembered with unalloyed pleasure afterwards, and that is perhaps more than can be said for the self-indulgence which has been resisted. Then about the teacher. Well, in one sense he is

not very important; it will possibly not be found practicable to employ a gentleman with a lot of titles following his name, but a very little energy will triumph over this difficulty very successfully, and the earnest students will find it perfectly true that,

"If they are truly brave,
They'll make the hardest circumstance a helper or a slave."

Far better than any teacher will it be if the half-dozen students can agree, and carry out the plan thoroughly, to alternate among themselves the occupation of the professorial chair. One author and one only must be studied by all the students at one time, but let no class dissolve without thoroughly mastering at least two good works; and it would be easy so to arrange the studies that the embryo professor *pro tem.* and his audience should work up a given subject in the interval of the meetings. He would then have the great advantage of addressing a critical audience, and the audience would in a measure be guaranteed against a lecturer unable to appreciate their ignorance and its requirements. The preparation which we suggest for the chemical examination is a rough home-spun arrangement, but it will certainly be found to wear well, and all that it demands for complete success is the exercise of a few qualities—self-denial, perseverance, and good temper—the requirement of which accomplishments will be some compensation, even though in the primary object of the classes—the study of chemistry and the passing of the pharmaceutical examinations—the promoters should fail completely.

EXIT MR. BETTS.

MORE than six years have passed since Mr. Betts, the patentee of the metallic capsules with which his name was associated, won for himself an unavoidable, but, perhaps, not to him an unpleasing renown, as the ogre of the trade. With fair reason to believe that we are now commenting on this subject for the last time we venture to recapitulate, very briefly, the story of this battle about metallic capsules, as far as chemists and druggists have been concerned. Mr. Betts obtained his patent in 1849, in his specification describing his invention as consisting of two parts, first, the metal itself consisting of lead coated with tin, and secondly, the manufacture of capsules from this material. From then until 1865 he was engaged in various suits, one of which travelled to the House of Lords, and was finally settled in his favour. His opponents disputed the validity of the patent, on the ground that the invention was not new, a similar specification having been made by one Dobbs, in 1804. In disposing of his various opponents Betts had spent in law a sum which he reckoned at £50,000, and now his patent had only thirty months to run. Hay must be made, however, so long as the sun did shine, and, therefore, with the aid of lawyers, a scheme was concocted, the extent of which we have probably never known. It should be stated that the patent had already expired in France, where many manufactories of capsules long existed, that metallic appendage having been invented and made by M. Dupré, many years before Betts thought of it. First of all Mr. Betts filed a bill in Chancery against Mr. Rimmel, whose toilet vinegar and other preparations were protected by capsules of French manufacture. Then he filed bills against twenty-five retail chemists and perfumers, who, in the most perfect innocence, had sold articles with such capsules on them. This action terrified the whole trade: Betts was a veritable Robespierre of business, and the call of his tumbrils for more victims was daily anticipated. Dark hints were made too that even purchasers of capsuled articles were not safe.

The vaguely hopeful tone of counsel's opinion whenever it was taken hardly tended to reassure the defendants, actual or probable. Several of those against whom bills had been filed, compromised the matter with Mr. Betts. Mr. Rimmel, desirous to avoid litigation and protect his customers, offered him £1,000 and a guarantee of all his trade for ten years to withdraw all actions pending, but the offer was refused. The combination of the trade, and the formation of a defence fund, must be in the memory of all our readers. It was determined that one case should be tried, and on the issue of this representative one, "Betts v. Willmott," the rest should stand or fall. This was tried in June, 1870, before Vice-Chancellor James, and the plaintiff's case was completely overthrown by some startling facts which were proved and admitted by him in cross-examination. Mr. Rimmel's capsules had been bought from three French manufacturers, Dupré, Courdrouzy, and Espinasse. Of the first two, it was satisfactorily proved that their capsules did not infringe Betts's patent. Espinasse admitted that his capsules were made according to Betts's process, by permission of the patentee. Further investigation, however, showed that Espinasse was not really the proprietor of the factory in Paris, which went in his name, but belonged actually to Betts himself! The plaintiff's case then depended on whether he, as Espinasse, had supplied capsules to Mr. Rimmel in London, or to Mr. Rimmel in Paris exclusively. This was settled by the production of an invoice which showed that at least in one case Betts, as Espinasse, had supplied a large number of capsules to Mr. Rimmel's house in London direct, which capsules formed the *corpus delicti*. The plaintiff made a vain attempt to distinguish between himself as an Englishman with English rights, and himself as a Frenchman with French rights; but it availed not. The Vice-Chancellor characterized the case as "about the most impudent that had ever come into court," and he decided against the plaintiff, dismissing the bill with costs. Mr. Betts, nothing daunted, appealed to the Lord Chancellor, who simply confirmed the first verdict, accompanying it with the same flattering opinions. It was rumoured that the case would be carried to a still higher court, and Mr. Betts's courage in this sort of warfare had been too long proved to be questioned now, but our latest information seems to show that at last his discretion has overcome his valour, and that the matter may be looked upon as finally settled. The event of the case against Willmott, though it settled the other bills against retail traders, did not affect the one filed against Mr. Rimmel. The latter gentleman, therefore, through his attorneys, called upon Mr. Betts to appear for cross-examination in his case, but with unusual modesty Mr. Betts declined the invitation, and threw up the sponge by agreeing to withdraw the bill and pay the defendant's costs.

So ends this *cause célèbre*. Satisfactorily to all who care to see broad principles of equity prevail over any mere technicalities of law. But it is impossible to overlook this one fact, that as yet no decision has been given which defines exactly the position of the retail trader in such a case as that which Betts had intended to raise. The discovery of the Espinasse trick ensured a decision for the defendants, but it was given quite apart from any arguments as to the legal liability of a trader who most innocently infringes somebody's patent, of whom and of which he may possibly never have heard. There is certainly some foundation for the belief that a patentee may obtain damages from any one who infringes his rights in any way whatever, and in no case is ignorance of the law admitted as a sufficient justification of its transgression. The retailer, it may be, has his remedy in turn against the manufacturer who supplied the goods which have caused him so much injury.

But what a pleasant reflection for any retail chemist and druggist as he lays his head upon his pillow, that for aught he can tell he may have broken his country's laws a dozen times during the day by selling articles in peculiar shaped bottles, pots, or boxes, or with extraordinary corks, covers, stoppers, or labels, and that any one of these transactions may demand two chancery suits before he can be nominally set straight, but virtually ruined. We plead that in the not improbable event of a revision of the patent laws these facts should be remembered, and that some clause should be inserted defining exactly from whom and by what means an inventor may obtain compensation for commercial injuries which he may have suffered.

THE AMERICAN PHARMACEUTICAL ASSOCIATION.

St. Louis Meeting, September, 1871.

BY HENRY B. BRADY.

(Continued from page 340.)

WE left off somewhat abruptly in the middle of the second day's session, and propose now to resume our narrative with the aid of the published reports, to which we have before expressed our obligation.

The Report of the Committee on Adulterations and Sophistications was read by the Chairman, Mr. Jos. P. REMINGTON, who began by stating that it was twelve years since any official communication on the subject of adulterations had been presented to the Association, and that, therefore, the committee had decided to supplement their own work by collating from the labours of different inquirers, whose researches had been published in the interim. The report was arranged under several headings, drugs and commercial products being taken first. A few extracts, in substance, from the report, may be of interest:—

"Drugs were stated to be largely adulterated. Advantage being taken of the peculiarities of each, similar substances at much lower prices were employed for the purpose in varying proportions: frequently water was the adulterant; often white substances, such as *fleur*, starch, or *terra alba*: and sometimes the adulterant, though harmless in itself, diluting or lessening the activity of the drug, changed its properties.

"The greatest adulteration was no doubt practised in powders, principally on account of the difficulty of detection. The committee had been informed that several wholesale drug houses had rooms set apart for the purpose of mixing powders; and they had been told of a regularly organized adulterating department in a house in Cincinnati, with a foreman—of no doubt large experience—to superintend that special branch.

"The small houses indulging in such practices were accustomed to send the drug, with the adulterant, to the mill, and then, of course, the miller became *particeps criminis*. Spices, on account of their widely-extended use, were, of all powders, most largely adulterated. Wooden fibre, veritable 'powder of post,' sawdust, and musty ship biscuits, were all in demand for the purpose. Startling revelations might be made if a spice-miller could be forced to disgorge his ill-gotten knowledge.

"The only safe way to obtain pure powdered drugs was to pay prices bearing a profit, and to buy from houses acknowledged to be above suspicion. Some wholesale druggists of undoubted character and ability had established mills on their own premises, and did their own powdering. But it was to be regretted that it was not a paying business, principally because they could not produce a fine, handsome-looking powder for the same money as the professional miller, objecting to use his means. The number of pharmacists who were influenced by the trifling advance in price was unfortunately continually on the increase. As long as this fact remained, the adulteration of powders must flourish.

"Assafoetida had attracted some attention on account of a recent lawsuit in New York and Philadelphia, and the profession at large might profit by this transaction, for the subject of adulteration in assafoetida had been brought prominently before them. An analysis by Prof. Maisch of

five samples showed the presence of 57, 44, 15, 51, and 62 per cent. of impurities, the average being 46 per cent. The impurity consisted chiefly of sulphate of lime.

"The adulteration of Burgundy pitch, otto of rose, bees' wax, barks, cochineal, and gum arabic, were next adverted to.

"Lard was said to be a difficult article to get pure in some localities. Vidal, of Lyons, had alluded to an adulteration of lard containing 50 per cent. of carbonate of soda. The most frequent admixtures in American samples were water, starch, and terra alba.

"Oils of cloves, lemon, and peppermint, swell the list of drugs commonly adulterated.

"There were not many new adulterations to notice in Opium. An unusual proportion of leaves might sometimes be observed, and a stray bullet or piece of quartz might often be picked out, the monotony being sometimes relieved by finding a considerable amount of starch, but good opium was not to be had in the market at a reasonable rate. The large lot of Government powdered opium thrown on the market at the close of the war had an effect in supplying the trade with good powder, but this, though yet occasionally seen, was fast disappearing. One druggist informed the committee that he bought a half barrel of opium pills and had them ground up into powder for his own use. This powder would contain 16 per cent. of soap, granting that the pills had been made according to the U. S. formula."

In a similar way the whole range of the *Pharmaceopœia* was treated, and but for the discussion which followed one would have thought the subject was exhausted.

The report then was adopted, and referred to the Committee on Publications.

A long discussion followed, in which Messrs. Maisch, Markoe, Doliber, Brady, Remington, Proeter, and Saunders participated.

Although one or two suspicious circumstances which had come under the notice of the committee, and had been properly dwelt upon in their report, were explained by those gentlemen who took part in the debate, the general tendency of their observations was rather to increase than diminish the tale of iniquity. White Castile soap was said to be made largely with cocoa-nut oil for the sake of its moisture-retaining properties, and received additions of French chalk and other earthy materials to help in respect to weight. Oil of Sandal wood manufactured from castor oil, oil of copaiba, and otto of roses, was in the market; and oil of peppermint containing 25 per cent. of castor oil was exported to Canada as "No. 2" oil to evade the duty. The old English difficulty of precipitated sulphur *versus* milk of sulphur was once more ventilated, and the very peculiar views of the Old country in respect to it had to be explained. Both the report and the discussion were calculated to foster gloomy views of commercial morality.

The committee to audit the Treasurer's accounts reported that they had examined the vouchers, and that the entries were in every particular correct; they further commended the general care with which the accounts were kept. The report was received and the committee discharged.

The Committee on Photographic Portraits reported through their Chairman, Mr. H. W. Lincoln, that, owing to the exceeding modesty of the members, they had only collected thus far about 125 photographs, and would soon have these ready for the Association. The committee was continued, with a new member in place of one who had failed to attend to his duties.

A committee was next appointed to consider the question of time and place for the next meeting of the Association.

A communication from the New Jersey Pharmaceutical Association was then read concerning the Internal Revenue Law relating to the sale of liquors by druggists, and embodying the resolutions adopted at their meeting at Long Branch.

This communication raised a discussion almost incomprehensible to an English listener. In this country we do not recognise the necessity for chemists to keep in stock or to retail either wine or spirituous liquors. In the United States the proportion of the middle classes who keep articles of this sort in their own houses is much smaller than with us and to meet the real or supposed hardship of having to send to a wine merchant for what may be required, the chemist is

expected to keep a supply of such liquors as are likely to be used by invalids. Amongst the better class of pharmacists no encouragement is given to business of this sort, and the profits accruing from it, amongst those who confined themselves to their legitimate sale, was stated by one of the speakers not to suffice to pay for the license. The object of the New Jersey memorial as stated by a member was to relieve chemists from the disgrace of being compelled to take out licences as regular liquor dealers. After a discussion, in which Messrs. Maisch, Proeter, Parrish, Sargent, Dalrymple, and Ebert took part, the subject was referred to a committee for consideration; their report, presented the following day, will be found in full in another column.

THIRD SESSION—Wednesday Afternoon.

The Association met at four o'clock. There was a smaller attendance than in the morning.

After the minutes of the previous sitting had been confirmed, Prof. MAISCH read the report of the Committee on Legislation, which was accepted and referred for publication. The report stated what had been done in America by legislative enactments during the past year, alluding especially to changes in the law in Rhode Island, New York, and Ontario (Canada). The same committee were continued another year, with the addition of Mr. W. H. Primm, of St. Louis.

Prof. PROTER read the majority report of the committee appointed to consider the feasibility of holding the International Pharmaceutical Congress in Philadelphia in 1876. The majority of the committee regarded the project with favour, the remainder thought it unwise. After some discussion, the substance of the report was adopted. It was afterwards determined that, if the International Congress should not accept the proposal a general invitation should be extended to the pharmacists of all nations to meet the Association at its annual gathering in Philadelphia in 1876, and a Committee of Arrangements was appointed to consider the matter and report at a future (annual) meeting.

The following members constitute the Committee:— Prof. Edward Parish, *Philadelphia*; Samuel M. Coleord, *Boston, Mass.*; Edward S. Wayne, *Cincinnati*; Edward L. Milhau, *New York*; George Buck, *Chicago*; Prof. J. Faris Moore, *Baltimore*.

Mr. H. B. BRADY then presented and read a paper by Daniel Hanbury, F.R.S., of London, entitled, "Instructions to the Colony of Virginia of such things as are to be selected and exported to Great Britain." Mr. Hanbury had discovered, in the Calendar of State Papers of the reign of James I., a notice of a document with the above title. The paper read before the Association consisted of extracts from the original document with explanatory notes. It gave in addition to the list of articles desired by the Home Government sundry memoranda as to their collection, their various qualities, and their probable market value.

The communication was received with much enthusiasm, and a motion was made and adopted that thanks be returned to the author for his important contribution to the proceedings of the meeting.

Replies to queries were then proceeded with—

Query No. 1.—"Preparations of Rennet and Pepsin," reply by Mr. Clemons Parrish, was read and referred for publication.

Query No. 2.—"On the Preparation of Camphor in Powder, so that it will remain in that Condition." Mr. J. C. Lowd, of Boston, forwarded a reply, the gist of which was that by a subliming apparatus, in which quick heat is employed, and a large cooling surface, a pound of camphor could be sublimed as a fine powder in half an hour, and that so prepared it would retain its pulverulent form.

Query No. 3.—"On Extracts of Meat, their Nutritive Value, and their Comparison with each other," was answered by Prof. A. E. Ebert. The following kinds had been examined, viz:—those of the Liebig Company—Messrs. A. Benites and Co.—Mr. Tooth—San Antonio (Texas) Co.—and Messrs. Harris and Schrade, Texas; they were found to be almost uniform in composition and character. If there were any difference in value, they might be arranged as above in order of merit.

Tourtelot's No. 1, Tourtelot's No. 2, Tourtelot's Solid Extract, and Borden's Condensed Beef had also been

examined, but did not yield as much nutritive matter as the soft extracts of the first list.

Some allusions were made by a member to the extracts of other makers, well known in England, but not generally met with in the American market. The use of the microscope under certain limitations as an assistance in determining the value of the extract and the employment of dialysis as a means of obtaining the non-crystallizable portions for separate examination, were briefly adverted to.

Some routine official business closed the day's work. The evening was spent by the members in social fashion at the Southern Hotel.

FOURTH SESSION—Thursday Morning.

The Secretary read the minutes of the last session, which were adopted.

The Replies to Queries were resumed—Nos. 4 to 8 inclusive, not being ready, a communication from Dr. E. R. Squibb, "On Cantharidine and a Fluid Extract of Cantharides," was presented and read by Prof. Procter. This was an excellent and elaborate paper, and one of which any abstract would be a practical injustice. Its conclusions were based on experiments, and their practical value measured by results.

Query No. 10.—"What is the Best Method of Making Suppositories Extemporaneously?" Mr. R. B. Ferguson, of Washington, D. C., in reply to this query, gave a process which he had for a number of years pursued with success. It consisted of scraping a suitable quantity of pure cacao butter on a board fifteen inches square, adding the active constituents of whatever sort, and with a stout spatula mixing the ingredients. When well mixed and worked to proper consistence, the mass was rolled and cut in a pill machine, or in any other convenient way, and then moulded into a proper shape by aid of the fingers, which must be kept dry by powdered arrowroot. The usual size of the suppositories were stated to be for the rectum, 15 to 20 grains; for the vagina, 1 to 4 drachms; for the urethra, 3 grains to 10 grains.

Mr. BRADY, on being called upon, stated that he could not regard the paper as a satisfactory reply to the query,—the method of operating proposed in it could lead to no uniformity in results. He stated that having learnt before he left England that it was probable this subject would be brought forward, he had proposed to write a brief paper for presentation at that meeting. As he had failed in his purpose for want of time, he had been obliged to content himself with bringing some specimens bearing on the subject, and making a few extempore remarks upon them.

As a general excipient for medicines in this form, he agreed with the writer of the paper that theobroma oil was the best. The difficulty in obtaining a quite satisfactory commercial article was noted, and the method of purifying detailed. A formula for a *soluble* as well as *fusible* material, consisting chiefly of glycerine and gelatine, and adapted for the exhibition of alkaloids, opium, and several extracts, was discussed, and specimens of suppositories made from it were shown. Uniformity in practice being important, the use of moulds, in preference to mere hand manipulation, was advocated. The plated gun-metal moulds made originally under his (Mr. Brady's) instructions by Messrs. Maw, Son, and Thompson, of London, were alluded to, and specimens sent by that firm were shown. The recognized size of a suppository in England now was fifteen grains; medicated pessaries were variously made, but most commonly either sixty or 120 grains in weight. Urethral suppositories, known in England as "soluble bougies," were usually made two or three inches long, and about the diameter of a No. 9 catheter.

Mr. JAMES L. LEMBERGER read a paper on "Urethral Suppositories," in which he advocated preparing them in a mould, similar to the tin moulds used in the manufacture of candles, strings being passed through the centro in place of wicks, and the material, in a semi-fluid condition, poured in. A mould arranged on this plan and specimens of the bougies made in it were exhibited.

On the recommendation of the Executive Committee, the following gentlemen were elected Honorary Members of the Association:—Prof. Redwood, *London, England*; Henry B. Brady, *Newcastle-on-Tyne, England*; Prof. Atfield, *London, England*; Prof. De Vrij, *The Hague, Netherlands*; Leon Sou-

beiran, *Paris*; Augustin Delondre, *Sèvres*; A. Chevallier, *Paris*; Prof. Dufflos, *Breslau, Germany*; Prof. Ludwig, *Jena, Germany*.

The committee, to whom was referred the memorial of the New Jersey Pharmaceutical Association, presented the following report, which, being approved, was adopted, and a small committee, in accordance therewith, appointed:—

"1st. Apothecaries should not be taxed as liquor dealers, if they confine the sale of liquors to the sick, and require a prescription or other written evidence of its need for medicinal use.

"2nd. That such sales should be limited in quantity to half a pint or a pint.

"3rd. That when apothecaries prefer to enter the business of selling liquors, with a view to supplying general demand, they should undoubtedly be required to take a liquor dealer's licence.

"4th. That in either case we are of the opinion the right of sale should not be construed to permit the drinking of liquors in the apothecaries' premises, unless for relief in emergencies of illness.

"5th. That if these views are acceptable to the Association, a committee be appointed to present them to the Commissioner of Internal Revenue."

Query No. 9.—This query related to the quality of commercial glycerine.

Mr. JOSEPH P. REMINGTON brought up an excellent report with the results of the examination of the glycerine of all the well-known makers. The characters of satisfactory glycerine were stated as—sp. gr. 1.25; freedom from fatty or empyreumatic odour when cold, heated, or diluted; and absence of any reaction with nitrate of silver. The samples tested convey the assurance that there need be no difficulty in obtaining glycerine in every way fit for medical use.

Query No. 11.—"On the Desirability of a Liquid Preparation of Chloral."

Professor MARKOE, in his report on the subject, condemned liquid preparations of chloral from their tendency to alter in composition by keeping.

A paper on "Chloral," by Dr. E. R. Squibb, was presented and read by Professor Procter.

The main points of Dr. Squibb's communication were, that a good reliable chloral was more easily obtained now than a year ago; that chloral alcoholate was absent from the market in America; that the small crystals or crystalline powder was preferable to the cake; that a hydrate of chloral a little short of perfect hydration was the best preparation; that when dispensed, the addition of a drop or two of dilute ammonia tended to retard any change which might take place; and that it should always be dispensed in glass-stoppered vials.

A long and interesting discussion followed, in the course of which Professor Maisch advocated the use of chloral which had been recrystallised from solution in bi-sulphide of carbon.

Query No. 13.—"On the Extent to which Various Oils are substituted for Olive Oil in Commerce."

In reply, Mr. H. N. Rittenhouse gave some interesting statistics as to the quantity of various oils manufactured here and abroad. It was difficult to say how far they were used as substitutes for olive oil, and still more so how to detect them.

After the reading of this paper, Mr. Bedford stated that up to a period less than a year ago more than 500,000 gallons of a refined oil obtained from petroleum had been sold for mixing with olive oil. The refined oil spoken of was perfectly bland to the taste, *entirely* free from odour, and there was nothing whatever about it that would lead to a suspicion of its origin. To all physical observation it would hardly be thought to be any other than olive oil even when alone; when mixed with from 10 to 20 per cent. of true olive oil there was scarcely a chance of detecting it, except from the difficulty of saponifying it by the ordinary means.

Query No. 16.—"On the Education which should be required from Apprentices, and what means should be employed to render their Apprenticeship profitable to themselves and satisfactory to their Preceptors."

This question was treated in a very able paper by Mr. Colcord, of Boston.

A paper of similar bearing was subsequently read by Prof. A. B. Prescott, of Ann Arbor, Mich.

The committee appointed to consider a suitable place for the next meeting presented their report, recommending Cleveland, Ohio, and the time was subsequently settled for the first Tuesday in September, 1872.

A resolution was adopted that the Executive Committee be authorised to appoint a delegate to attend the meeting of the International Pharmaceutical Congress to be held in St. Petersburg in 1872.

A paper on "Pharmacy in Canada" was then read by Mr. Saunders, of London (Ontario), which was of great interest. The writer reviewed the history and progress of pharmacy in Canada, detailing the various steps taken by local societies to bring about suitable legislation in favour of pharmacy and pharmacists—the recent legal enactments, their operation, their present and probable results.

After some official routine business, the meeting adjourned till 3 P.M.

FIFTH SESSION—Thursday Afternoon.

After the reading of the minutes and their adoption, a member reminded the meeting that the North German Apothecaries' Association was that day assembled at Dresden, and moved that a telegraphic message of friendly greeting should be forwarded to that body. This was unanimously agreed to.

Mr. C. L. DIEHL then made some extempore remarks "On the Preparation of Aq. Ammonia from Sulphate of Ammonia." Leave was granted him to furnish a paper on the subject for publication in the "Proceedings."

Mr. E. H. SARGENT, on behalf of the Business Committee, read a communication "On the Revenue Stamp Tax," alluding to the practice adopted by the United States Government of imposing penalties upon druggists for unintentional omission in stamping medicines and perfumery. He considered that the system pursued by the aid of detectives virtually forced an infringement of the law. Thereupon it was resolved that the subject should be referred to a committee to report on what action would best secure a remedy for the abuses alluded to.

Query No. 20.—"On the Sub-carbonate of Iron of Commerce." Mr. P. W. Bedford read a reply to, containing the results of the examination of samples from leading American manufacturers.

Query No. 22.—"On the Morphia strength of Commercial Samples of Tincture of Opium," was replied to by Mr. L. M. Rice. Twenty samples obtained from respectable retail drug stores in New York, Boston, Chicago, and Hartford, had been examined. The normal amount of morphia in a fluid ounce of tincture of opium had been reckoned at from 2·62 grains as a minimum, to 4 grains as a maximum. Of the samples examined, but one fell below the lower standard, while nineteen were above it; and of these, six were above the higher standard.

Query No. 23. concerned "Poison Regulations," a subject English pharmacists are already weary of. Mr. W. C. Bakes' paper was a thoughtful one, but added little to the suggestions that have been long before pharmacists.

A paper from Dr. E. R. Squibb was then read by Professor Procter on "Litmus Paper," giving minute directions for its preparation, and recommending, on the score of greater delicacy, a pale blue tint in preference to a darker colour.

Query No. 31.—"On the Proportion of Magnesia contained in Commercial Samples of Solution of Citrate of Magnesia." Professor Markoe read a paper based upon the examination of twelve samples obtained in Chicago, Philadelphia, and New York. Of these, one contained a small quantity of Epsom salts; three were solutions of tartrate of soda; the remainder were all citrate of magnesia, but only one or two of them appeared to have been made in accordance with the U. S. Pharm.

Query No. 37.—"On the Best Formula for a Solution of Citrate of Magnesia." Mr. E. H. Sargent stated that a satisfactory and efficient purgative could not be made with citrate of magnesia alone, and suggested a solution of citrate of magnesia and soda, in which soda carbonate replaces a portion of the magnesia.

Query No. 41.—"On the Substitution of Glycerine for Sugar in Fluid Extracts," was responded to by Mr. W. J. M. Gordon,

who stated that fluid extracts, containing glycerine in the proportion of one-fourth to one-half of their bulk, seemed to be better than those in which sugar was used; that they did not deposit, and that the glycerine acted as an antiseptic.

Query 27.—"On the Source and Botanical History of African Saffron," by Prof. J. M. Maisch. The brief reply to this query stated that the so-called Saffron was derived from a species of *Carthamus*, indigenous to the East Indies, but which had become naturalized in Africa.

Query No. 30.—"On a Substitute for Carbonate of Magnesia in Preparing Aromatized Waters," by S. A. D. Sheppard, of Boston. The results of various experiments with carbonate of magnesia, glass, pumice, kaolin, and silica, seemed to show that carbonate of magnesia answered most satisfactorily, and silica somewhat less so, the remainder being objectionable.

Query No. 29.—"On Aromatic Sulphuric Acid," by Thomas Doliber. The chief suggestion of this paper was to replace cinnamon bark by the essential oil, and various experiments were quoted, showing that an aromatic sulphuric acid prepared in this manner did not deposit as when made by the recognised process.

The Report of the Committee on Place of Meeting in 1872 was again read, and a long discussion ensued as to the locality to be chosen. Motions were made to substitute Richmond, Leavenworth, Portland, Pittsburg, and Saratoga, but all were lost, and the report of the Committee recommending Cleveland, Ohio, as the place, and the first Tuesday in September, 1872, as the time, was adopted.

After some further elections to membership, the Association adjourned to meet on Friday at 8·30 A.M.

The evening was devoted to a banquet given by the St. Louis pharmacists to the members of the Association and their friends, at the Southern Hotel, a considerable number of ladies and other invited guests were present, and the dining saloon of the hotel had been gaily decorated for the occasion. The company feasted merrily, and as most of the States of the Union had to be individually toasted afterwards, besides the Association itself and "Sister Societies," there was no lack of speech-making as the evening wore on.

SIXTH SESSION—Friday Morning

Mr. JOSEPH L. LEMBERGER read a paper on "Wild Cherry Bark, its Collection, and the Preparation of the Cold Infusion." Samples were submitted which had been collected during each month of the year, and the powder from each sample was also shown. His experiments indicated that the colour of the bark, and necessarily of its preparations, depends upon the proportion of tannin present.

Prof. PROCTER read a paper submitted by Dr. E. R. Squibb, on "The Root of Pareira Brava." The author alluded to the large proportion of the woody stems of Pareira Brava which were now sold in place of the root. He stated that the root was formerly used exclusively and corresponds to the older descriptions in works on *Materia Medica* and *Medical Botany*, that it is the true medicinal part of the plant, and that the stems are deficient in medicinal value.

The Business Committee presented the following resolution, which was adopted:—

"That the Business Committee be instructed to consider the expediency of a Board of Directors, which shall meet simultaneously with the Association, and transact—including the election of members—such business as is approved by the Association. The proposed Board of Directors to be composed of the officers of the Association, the Business Committee, the Committee on Papers and Queries, and the Executive Committee. The Committee to report at the next meeting of the Association."

Prof. A. B. PRESCOTT then read a paper "On Sulpho-phenic Acid and its Salts."

Query No. 36.—"On Fluid Extract of Senega," a paper by Mr. H. M. Rittenhouse, was read, and was followed by one on the same subject from Dr. E. R. Squibb. Mr. Rittenhouse suggested the use of a small proportion of carbonate of soda, and Dr. Squibb the addition of a minute percentage of caustic ammonia, to the percolating liquid, to remedy the tendency of the fluid extract to gelatinize.

Query No. 24.—This referred to the "Purity of Commercial

Tartar Emetic." Mr. J. P. Remington read a reply, showing that the article was not liable to fraudulent adulteration, though two of the samples examined contained a small quantity of free Cream of Tartar.

Query No. 38.—"On Insect Powder, and whether any Indigenous North American Plants possess the same Qualities"—was responded to by Mr. S. S. Garrigues, of Saginaw, Mich.

Papers were also read from Mr. William Saunders, of London (Ontario), on the "Preparation of the Solid Alcoholic Extracts of the U. S. P.," containing the results of a series of accurate experiments; Dr. E. R. Squibb on the "Alcoholic Extract of Jalap;" Mr. J. Harrop on the "Preservation of Herbs."

The tenor of the last-named paper was to condemn the herbs usually sold in pressed packages as worthless; the herbs themselves being carelessly collected, badly preserved, never properly freed from stalks, and often too old to possess any medicinal value. He made favourable allusions, however, to those put up by a Boston firm (Messrs. B. O. and G. C. Wilson), as the exception that proved the rule.

The writer of the present article may fairly confirm this judgment. Whilst staying in Boston he had, through the courtesy of Mr. Horton, the opportunity of inspecting the arrangements and machinery for picking, pressing, cutting and storing herbs in Messrs. Wilson's factory, and came away with a very high estimate of the care bestowed upon the process from first to last.

The time of the meeting being limited, the following papers were taken as read:—

"On Syrups Prepared by Cold Percolation," by L. Ornyski; "Pharmaceutical Notes," by George C. Close, of Brooklyn; "Note on Rhubarb," by Dr. E. R. Squibb; "Note on Bicarbonate of Soda," by Dr. E. R. Squibb.

Mr. HENRY C. GAYLORD, of Cleveland, Ohio, was appointed the Local Secretary for the ensuing year.

Resolutions were passed tendering the thanks of the Association to the Public School Board for the use of the building, and instructing the Local Secretary to draw upon the treasury for a sufficient amount of funds to pay for the consumption of gas, etc.

A vote of thanks was accorded to the Local Secretary, Mr. Crawford, for the valuable services he had rendered in his endeavours to secure the comfort of the members.

Prof. PARRISH, of Philadelphia, offered the following resolution:—

Resolved, "That the warmest thanks of the members of this convention are due and hereby tendered to the pharmacists, druggists, and the citizens generally of St. Louis, for their cordial and generous hospitality, and that we join with them in their bright hopes and aspirations for the growth and prosperity of the Mound City."

The delegations from colleges were requested to nominate members to act as a permanent committee on the U. S. Pharmacopœia. The following were then named: *Mass College*, Prof. G. F. H. Markoe; *New York College of Pharmacy*, P. W. Bedford; *Philadelphia College*, A. B. Taylor; *Maryland College*, Prof. J. F. Moore; *Chicago College*, Prof. A. E. Ebert; *St. Louis College*, M. W. Alexander.

The Executive Committee reported the names of four persons as candidates for membership, and they were duly elected, making a total of one hundred and eight new members elected during the meeting.

The Committee on Specimens requested to be allowed a month to prepare their report, which was granted.

The minutes of the final session were then read by the Secretary, and adopted, and the Association adjourned to meet in Cleveland, Ohio, on the first Tuesday in September, 1872.

Space fails us to tell of the exhibition of objects of pharmaceutical interest held during the meeting. It was a large and attractive assemblage of specimens, and, to the foreign visitor, singularly instructive.

The last hours of our sojourn in St. Louis were spent at Shaw's Botanical Garden, a fine estate laid out by a resident Englishman, within a walk of the centre of the city, intended, it is said, for a gift to the citizens. Through the kindness of the Local Committee carriages were provided for the excursion, and the members, after receiving a hearty welcome from the venerable proprietor, were conducted through the beautiful grounds, and had the benefit of his explanation of the various objects of interest with which the

place is crowded. Returning to the city, the dismal process of dispersion began, and upon this we will not dwell. The writer found himself one of a party of about twenty (including ladies) doomed to a night in a sleeping car, *en route* for the Mammoth Cave in Kentucky—a fitting termination to this pleasant *réunion*—nor need it be a matter of wonder that it seemed harder still, a few days later, to part with those who shared so delightful an excursion, when with one companion only, Mr. Bartlett Patten, of Boston, he took his way through the beautiful mountain scenery traversed by the Pennsylvania Central Railway, to Philadelphia.

THE SYRUP AND RESIN OF TOLU, AND TINCTURE OF CINNAMON.

By A. F. HASELDEN, F.L.S.*

THE legitimate field of operation for the pharmacist is pharmacy; but wide as that field may be, it is not always easy to supply the demand for original matter. Nevertheless, facts occasionally spring up considered worth recording.

Syrup of tolu would seem at first sight to be unimportant; it has, however, been made more prominent since the introduction of the hydrate of chloral. I give the Pharmacopœial process. Balsam of tolu is boiled with distilled water for half an hour in a lightly covered vessel, distilled water being added, if required, to make up the quantity specified; when *cold*, the liquor is filtered, and the sugar being added, is dissolved by the aid of a water-bath heat, the product having a specific gravity of 1.330. The result of filtering when *cold* is the separation of small particles of resinous matter, with a mixture of cinnamic and benzoic acid, floating upon the surface of the liquor; if filtered whilst hot, this combination of acid would remain suspended, although not dissolved in the cold syrup, which when used as an adjunct in cough preparations, might induce the very irritation it was intended to allay. In the last edition of Royle's "Materia Medica" it is stated that the syrup of the P. B. is about twice as strong as that of the P. L. This is an error of calculation, as the preparations are almost identical. The older and harder the balsam of tolu the larger the crop of crystals. On making the syrup, I separated from one quantity of 3*ijij*, 5*vj* of balsam, 14 grains of crystals; and three or four months later, from a similar quantity of the same balsam, 34 grains. The quantity of balsam ordered for making the syrup appears larger than necessary, inasmuch as it is not exhausted; but the object is, I am told, to obtain a full flavoured syrup. Besides this mixture of cinnamic and benzoic acids, there is the resin remaining.

In the Year Book of Pharmacy, 1870, at p. 53, may be found the following form for a pill varnish, viz., ether, 100 parts; balsam of tolu, 10 parts; eolophonum, 1 part; absolute alcohol, 10 parts; macerate until the resin is dissolved; the tolu balsam must be previously digested four hours in hot water, and then dried and added to the rest. The mode of coating is by putting the granules with sufficient of the varnish, which is found out by practice, into a shallow circular porcelain evaporating dish, and quickly shaking them round; the process of drying may be quickened by throwing these into a sieve, and keeping up the rotatory motion; pills in large quantities in the same way, in small quantities in pots having an egg-shaped bottom. I have employed a similar varnish for several years, but I simplify the form for preparing the solution. In the first place I omit the eolophony or resin as being neither necessary nor agreeable, and instead of digesting *fresh* balsam of tolu in hot water, I take the resin of tolu, the waste product after preparing the syrup. I use less ether and more alcohol, thereby obtaining a less costly result, and one equally good; the only advantage of a large quantity of ether being the drying of the varnish in a shorter time, but for general purposes I find it dries quickly enough. If very rapid drying be necessary, methylated chloroform is the best solvent. My proportions are the following:—Resin of tolu, 3 parts; rectified spirit, 6 parts; methylie ether, 2 parts;

* Communicated by the author.

well shake until all that will is dissolved, use the clear solution. Iodide of iron pills and others are well preserved by this coating. I have also employed this solution as a liquid stopping for the teeth, applied by means of cotton-wool, and having found it more manageable and less disagreeable than the various solutions of mastich. I am led to oil of cinnamon, which, by exposure to the air or the influence of oxygen, is converted into crystalline matter, hydrated cinnamic acid, and from this I turn to simple tincture of cinnamon, some of which having been prepared a long time has become sadly decomposed. In the London Pharmacopœia there were two tinctures of cinnamon, the simple and compound, the former composed of cinnamon and proof spirit, the latter of cinnamon, cardamom, long pepper, ginger and proof spirit; the proportion of cinnamon in the compound preparation being only one-fifth of that in the simple. In the P. B. the simple tincture is alone retained,—of the two the compound would have been more serviceable. There is a positive disadvantage attached to the simple tincture; after long exposure to light it becomes much altered, in fact thick, and throwing down a copious deposit separable by filtration, leaving a poor solution very unlike the original, taste and smell much changed, possessing more of a weak storax flavour than cinnamon: had the menstruum for simple tincture been rectified spirit, the chances of decomposition would have been diminished. Simple tincture of cinnamon is not in daily demand in prescriptions, I have seen it prescribed with solution of perchloride of iron as drops, the production is dark green, even with a bright tincture. The old and altered tincture may be rendered bright by filtration, but it no longer resembles its primitive condition, either in taste or smell. I have never seen the compound tincture of cinnamon similarly altered, and I would suggest that a better and more generally useful tincture might be prepared upon the basis of the compound tincture of the P. L., using rather more cinnamon and less cardamom, for as it formerly stood it partook more of the character of cardamom than cinnamon, retaining the other ingredients and substituting rectified spirit for proof, or if not rectified, at least a stronger spirit than proof. Should it still be considered desirable to retain the simple tincture, I would recommend that it be prepared with rectified instead of proof spirit, as it would then remain a longer time unchanged.

Pharmacy.

SODA MINT.

MUCH employed as an antacid and carminative for overfed infants and dyspepsies.

R. Soda Bicarb., 3ss.
Spt. Ammon. Aromat., 5j.
Aqua Menthe Piperitæ, Oj.

M.

Dose, from a dessertspoonful to a tablespoonful for adults; from half to one teaspoonful for infants.—*Journal of Pharmacy.*

EAU DE GOUDRON.

The *Eau de Goudron*, which a chemist in Paris, by the name of Gnyot, is advertising and selling largely, is little else than tar-water—aqua picis. It is found of great efficacy in the treatment of bronchorrhœa and allied complaints.

ELIXIR OF BROMIDE OF POTASSIUM.

Bromide of potassium, 640 grains.
Curaçao cordial, 16 fl. ounces.

Dissolve.—*American Druggists' Circular.*

LABELS FOR DAMP SITUATIONS.

Quevenne recommended to write on the back of adhesive plaster. This kind of labels sticks eternally, so to speak.—*Ibid.*

BROMIDE OF POTASSIUM.

Dr. Julius Levy, of Berlin, gives drachm doses of bromide of potassium thrice daily. He finds that if continued for months, it is apt to produce boils; but if a fair dose of cinchona be given with it, this result does not occur.

FLORIDA WATER.

R. Olci lavandulae ..	2 drachms.
" Bergamott ..	2 "
" Limonis ..	2 "
Tinct. curcum. ..	1 drachm.
Olei neroli ..	1 "
" Melisse ..	30 drops.
" Rose ..	10 "
Alcohol, deodorised ..	2 pints.

The foregoing is said to be the recipe.—*American Druggists' Circular.*

CARBOLIC ACID PAPER.

Carbolic acid paper, which is now much used for packing fresh meats, for the purpose of preserving them against spoiling, is made by melting five parts of stearine at a gentle heat, and then stirring in thoroughly two parts of carbolic acid; after which five parts of melted paraffin are to be added. The whole is to be well stirred together until it cools; after which it is melted and applied with a brush to the paper, in quires, in the same way as in preparing the waxed paper so much used in Europe for wrapping various articles.

INEXTINGUISHABLE LAMP.

A new light, which seems fitted to be of use in submarine construction of works, is in use in England. It is a cylinder of tin, with a top filled with a phosphide of calcium, prepared by the inventor, a Mr. Holmes. When the lamp is thrown into the sea or river, the water, entering the cylinder, decomposes the phosphide of calcium, phosphuretted hydrogen results; the latter escaping in great quantities ignites spontaneously, and burns with a brilliant light.—*Scientific American.*

ENGLISH PHARMACY IN PARIS.

IT is surprising what a slight change there is here, after the siege and the Commune. With the exception of numerous bullet-holes in the plate glass-windows of the Boulevard shops there is very little devastation to be seen. At one corner of the Chateau d'Eau a chemist's shop is almost entirely destroyed; several of the great buildings are mere masses of ruins; the national loss is enormous, but individual losses were small in comparison. This has been the case with the pharmaciens of Paris; as in all other great capitals there are many here possessing a capital business, but very many others also who make a bare living. The latter are either scientific but not business men, or men who have begun life with too little capital; this we see too often also in London. Here, in this great city, our national pride ought to be pleased; without any doubt the finest pharmacies are those either belonging to Englishmen or managed so far in the English style as to rank under the generic term of *Pharmacies Anglaises*. Perhaps the first in Paris is the Pharmacie Mialhe, behind the Opera Comique. Mialhe was the special chemist to the Emperor; he holds a high rank among savants, and is a professor at the Ecole; his connection was enormous, and his returns proportionately great. After him must rank the English Pharmacies of the Place Vendôme and the Rue de la Paix. These combine the luxurios mahogany fittings of England with the taste and *savoir-faire* of France. In outward show as well as in quality of drgs and practical pharmaceutical knowledge, the French establishments are behind them. It is curious, too, that there are so few of these latter to be met with in so many of the chief thoroughfares—one or two only in the Rue de Rivoli, I do not think more than two along the grand Boulevard, and many fine streets without a single chemist in them. Passing from the Rue de Rivoli up the Rue Castiglione, we come upon the establishment of Mr. Hogg, whose *specialité* for many years has been cod-liver oil. I well remember the time when pale cod-liver oil was ridiculed in France; even to this day the provincial medical men generally prescribe the dark brown variety. Mr. Hogg was one of the first to introduce the pale oil in this country; he obtained the opinions of several high medical authorities in favour of this oil, and then he launched it in his peculiar triangular bottles. This pharmacie is decorated with oak panels and

various paintings (on inserted glass plates) of the principal medicinal plants. The idea is novel, but effective; it may be said to be a "picturesque" pharmacie. I have now a piece of one of the shells—huge long masses of metal—that penetrated the upper stories of this house. Passing up the arcade in the Rue Castiglione, we come to the establishment of Mr. Swann, one of the early English settlers in the profession in Paris. This is a model of what a typical dispensing chemist's ought to be; it looks like a glimpse of Regent-street or Piccadilly. Most of the Parisian pharmacies of any consequence have a *spécialité*, and the English houses are no exception to this rule; here we find the home of the syrups of the hypophosphites. In France, and in the many countries in which French *spécialités* are known, such preparations are ordered by doctors and bought by private hypochondriacs by preference in the form of *spécialités* or patent medicines. In England, on the other hand, it is the article itself that is ordered, and not the *spécialité*, fathered by a well-known name. Witness the innumerable syrups, simple and compound, that at the present day seem the fashion with practitioners, and prove the annoyance of the sensible dispenser. Passing up the street, we cross the Rue St. Honoré, where down near the Palais Royal used to exist the once partly English shop of Mr. Chavanon, the "Pharmacie du Louvre." This the proprietor left a little before the Palais Royal itself became, during those dreadful last days of the Commune, little better than a heap of ruins. In the next street (Rue Marcou) lives Mr. Bretonneau, one of the quondam Imperial pharmaciens. He is the proprietor of globules of the essential oil of *santalus citrinus*. This seems in wonderful favour among Paris medical men just now for obstinate contagious diseases. It is used with other modern ideas, such as simple water, Condyl's fluid, dilute phenic acid, etc.; but, apparently, with more than their success. We now enter the Place Vendôme, and come to a handsome corner shop, which seems to have taken to itself the chief characteristics of the English and the French pharmacie. Since the old proprietor, Mr. Celier, left it to manage one of the largest chemical works of Paris, few who have entered this place have had reason to be dissatisfied with his reception at the hands of the good-natured but capable pharmacien, Mr. Gallois, who now holds sway at "the house at the corner." At his very door was one of the most formidable barricades of the Commune; built *selon les règles de l'art (secundem artem*, as our pharmaceutical Latin has it), and strengthened with a deep trench or moat, it was one of the strongest defences of what was nominally and actually the military centre of the Paris of the revolution. Fortunately it turned out that the *élan* of the Versaillais was such that the resistance at this part of the city was not very much prolonged. We continue our way through the Place to what remains of one of the proudest monuments of French military glory—the Column Vendôme. It is still incredible to me that, universal as is the French love for *la gloire*, there should have been men—a large body of men too—eager and clamorous for the destruction of this tribute to their favourite virtue and the reminiscences of their past heroism and bravery. Because the father, by the captured cannon (forced to perpetuate their victors' glory), calls aloud to all men to testify to, and admire the exploits and bravery of the grandfather, is then the son to overturn this monument and cast it down to the greater glory and ultimate benefit of the human race? Absurdity can scarcely carry its illogical conclusions further. Let us pass now into the Rue de la Paix, once the centre of a little resident band of our compatriots, now the abode of jewellers with wondrous gems, and milliners famous at making airy nothings of most substantial value. On leaving the Place Vendôme, our attention is directed on the left to one of the handsomest pharmacies to be met with in London or Paris. This is the establishment founded by Mr. Roberts in years gone by, carried on by Mr. Shorthoso, and now by Messrs. Shorthoso and Field. The junior partner is at present one of the few "pharmaceutical" men of late years who has passed his examinations as pharmacien at the Ecole de Pharmacie of Paris. It is a beautiful shop: this is the opinion of every foreign visitor and every Parisian resident; the former notices that solidity that reminds him of Bond-street and the West-end; the latter, that scientific elegance that

he still thinks the peculiar birthright of Paris. Opposite we see the *local* of Mr. Swift, the Pharmacie Pariss. It will be doubtless in the recollection of many readers that Mr. Pariss was one of the innocent victims of the *coup d'état* of 1851. He was mortally wounded at his own door by the infuriated soldiery; an unfortunate sacrifice to that brutal, selfish cruelty, which was equally ready to curse or to benefit France in the accomplishment of its own ends. This elegant little pharmacie afforded much help to the wounded during the first siege, and also during the reign of terror of the Commune. During these latter days the then manager, Mr. O'Connell, visited the Archbishop of Paris in his prison, and was instrumental in procuring the escape from Paris of several priests and persons viewed with suspicion by the authorities. Here, close by the houses just mentioned, took place that fusilade on an unarmed and innocent populace! We now ascend the Rue de la Paix, and come, on the right, to a pharmacie that is one of the best known in Paris. It still goes by the name of the "Pharmacie Béral," from its former owner, who, when alive, was one of the lights of the European pharmaceutical world. He first brought out the scaly preparations of iron, the citrate, the tartrate, the ammonio-citrate, etc.; and several other chemical preparations, now in extensive use, first saw the light under his auspices, and as the product of his eminently practical mind. For this with us makes the great pharmacien; it is not enough to be scientific, it is necessary to bring this science to practical use, and to *profitable* use at the same time. Such a man was the late Mr. Béral. The establishment fell into the hands of Mr. Accault, who subsequently took as partner Mr. Lemettais, a pharmacien at that time in business in the Rue Percière Rouen; the latter, about two years ago, took the whole business. This is one of those shops that in this capital shows such a contrast to the *offices* in the provinces; here are exhibited, amidst the usual articles to be met with at London chemists, works of art that well display the finer artistic taste: Indian vases, figures of oriental jade, etc. Most of the pharmacies in this quarter are beautiful, whether we regard their internal architecture or the display and tasteful arrangement which meets us in every department. Cosmopolite, too, are these shops: the gigantic show bottles, simple in their outline, speak of the West-end of wealthy and substantial London; the many well-known American proprietary medicines give a glimpse of Broadway; Spanish and Prussian pharmacocorias are sure to be met with, both apparently in constant use (the latter, however, has a period of rest before it); French *spécialités* of course everywhere, side by side with English perfumery, German soap, Norwegian cod-liver oil, Italian essences—but I must stop, for if we once get to drugs, then every druggists' store can show the products of each quarter of the globe, from Canadian castoreum to South Pacific ambergris, from the rhubarb of Tartary to the cinchona of the Andes.

On the boulevards of Paris there are no English chemists, and the French are few and far between. Everyone knows this superb promenade, from the Madeleine to the Boulevard Sébastopol, and thence extending far away to the Bastile. In the great capitals of Europe can hardly be found its rival. Unter den Linden, at Berlin, has finer palaces; the Lung' Arno, of Florence, is more picturesque; portions of the "Ring" at Vienna more imposing; New York Broadway more teeming with the active life of this busy nineteenth century; our own Regent-street perhaps more suggestive of solid wealth; but as a combination of everything that is most attractive to all the senses, the great boulevards of Paris are pre-eminent. In the Rue Royale are hideous relics of the last days of the Commune, when Paris was in flames. Here we come upon houses complete wrecks, their places simply marked by heaps of calcined ruins, the papered sides of the various apartments still adhering to the adjoining houses, with here and there the empty frame of a mirror, the remains of a cooking range, or a half emptied cupboard. Turning in' o the Rue St. Honoré, we come upon a pharmacie, once that of the well-known and genial Mr. Dil Piaz; it has been now for some years in the possession of Mr. Géneau, who, in times gone by, was established in Boulogne-sur-Mer. Proceeding up the Faubourg St. Honoré, beloved of our wealthy compatriots, we come to the Pharmacie Pomme, opposite the Church of St. Philippe

du Roule, occupied after Mr. Pommies by Mr. Tournois, and on his retirement by his nephew, Mr. Dusart, who now holds it. This establishment has an English clientele of long standing, and the present proprietor is a man of scientific attainments. Then we reach the Champs Elysées. Here is a large and handsome shop known as the "Pharmacie Anglaise des Champs Elysées." It is French in its outward appearance, but English in its internal arrangements. In this neighbourhood are several other English pharmacies, one near the Arc de Triomphe, where the *local* is circular, and the counter forms a horseshoe from window to window; another in the Avenue Montaigne, now again occupied by its old proprietor, Mr. Christen. This is a very well arranged shop, and does a good business among the new avenues of palaces that under the Empire grew up in this neighbourhood. Such are a few of the points that strike any English pharmacien in a walk through Paris.

CONCRETE WHARF AT BATTERSEA.*

THE remains of many ancient buildings and engineering works afford ample evidence of the antiquity of the art of constructing in concrete. This practice, however, as regards superstructures, appears to have fallen into disuse, and to have been again revived in very recent times, although foundations and substructures have been executed in concrete for many years past. We have lately examined an example of concrete work as applied to the construction of a wharf wall and basement storey of a warehouse on the bank of the river Thames at Battersea. So far as we are aware this is the first application of the system to works of this class in the present day, and it has been effected by Mr. R. M. Ordish, who was applied to for a design for a river wharf at the Patent Plumbago Crucible Works, Battersea. He decided on adopting the built-up concrete system, partly from experimental knowledge of the qualities of concrete when properly mixed, and also from having observed, when in Algeria, the remains of a barrage across the river Mina. Although this barrage was constructed by the Romans many centuries since, Mr. Ordish found that the marks of the mould-boards were still clearly visible on the face of the work. The wharf at Battersea belongs to the Patent Plumbago Crucible Company, the makers of Morgans' Patent Crucibles, and is an extension of the river frontage of their premises on to the foreshore of the river. The wharf is about 60 ft. square in plan and consists of a storage vault and a building of three storeys, which has been carried up in brick and iron above it. The floor of the concrete wharf is at the level of Trinity high water, the floor of the vault being 10 ft. below it. The foreshore of the river was excavated to the hard gravel upon which a bed of cement concrete 3 ft. in thickness was laid. The roof of the vault, which forms the floor of the lower part of the superstructure, is also of cement concrete, and is carried on twenty-four brick piers. The vault roof is groined, and at the crowns the concrete is 1 ft. thick. Openings have been left in this roof for communication with the wharf floor above, and are closed with wrought-iron flap-doors hinged to cast-iron frames. The floorings of the vault and of the ground floor of the wharf are both paved with 2½ in. York stone.

The concrete walls are 3 ft. 6 in. thick at the base, and 2 ft. 9 in. at the top, the front wall having been carried 15 ft. below Trinity high water mark, and all the walls terminating 3 ft. 3 in. above that level. Ordinary fender piles, provided with mooring rings, are held by 1½ in. anchor bolts, 6 ft. long, and which are built into the front and side walls of the structure. In constructing the wharf, the foreshore was first excavated, about 2000 tons of stuff being removed. Fender piles were then driven, and afterwards a row of piles on the inside of the site of the proposed walls. Mould boards were then fixed horizontally against the piles, and the concrete was tipped in from staging. As the works were submerged when the tide rose, the construction could only be carried on between tides. As the

work advanced additional mould boards were placed in position, and were removed as the structure progressed and the concrete set; in this way the walls were raised to their proper level. The concrete consisted of 1 part Portland cement to 4 parts Thames ballast and sand, and about 1000 cubic yards were used in the structure. The cost of this portion of the work was about £2000, showing a saving of something like 25 per cent. in cost as against brickwork.

As the first of its kind in modern time, this structure may be regarded somewhat in the light of an experiment, although a successful one. We visited the works both during their construction and after their completion, and found at the finish that though there were indications of moisture coming through one of the side walls, it could hardly be termed a leak. An examination of these damp spots, where the concrete had been cut out, showed that they were caused by unavoidable accident in mixing the material, some small portions of the concrete not having had sufficient sand and small materials mixed with the ballast. The concrete being somewhat coarse at these points, permitted a slight percolation of moisture, which, however, was readily stopped by cutting out the defective portion, and filling in the space with cement. This wharf may therefore be considered a success, and will doubtless lead to the adoption of the built-up concrete system in future structures of similar character, combining, as it does, strength and economy.

The upper portion of the wharf is carried to a height of 33 ft. above the coping of the concrete walls. The side walls are of brick, the front being of brick and iron combined. Cast-iron columns carry bressummers of the same material, the openings being filled in with brickwork and glass. The front is surmounted by a brick cornice, and presents a light and ornamental appearance. The floors are supported on internal east-iron columns, and the roof is of timber, and is covered with a superior quality of slating procured from the Moelfra slate quarry near Port Madoc. The lower portion of the front of the original building, against which the new superstructure abuts, was removed to a height of 18 ft. for the whole width, in order to form an opening for connecting the new building. This opening left about 18 ft. of brickwork above, which, of course, was underpinned. The contract for the superstructure of this wharf was taken by Messrs. Manley and Rogers, the cost being about £3000, making a total for the whole work of £5000.



XYLONITE.

A SERIES of new articles have lately been introduced by the Xylonite Company, which deserve the special attention of chemists and surgeons. Xylonite itself is a patent composition prepared from cotton, oil, camphor and hydrocarbon. It is so described in the circular. From this a collodion is prepared, which is cheaper than that usually sold as surgical collodion, and is said to possess healing properties besides its advantages of forming an artificial skin like the gun-cotton collodion. Again, the xylonite is prepared in the form of a membrane made of various thicknesses, and undoubtedly of great value in many surgical cases. This membrane will in many cases replace the thin gutta-percha often used. Its slight camphor smell is an advantage, rather than otherwise. Lastly, the company supplies various fabrics proofed with the xylonite, presenting an impermeable surface which can readily be washed. By reference to our advertisement columns, it will be seen that the company is willing to send samples to those who would like to examine these promising novelties.

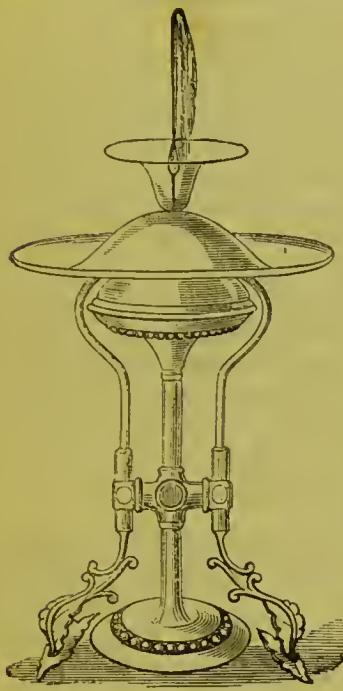
* Extracted from *Engineering*, Dec. 1, 1871.

EUGENE RIMMEL.

AMID Mr. Rimmel's gorgeous and luxurious display, the most striking novelty is the Perpetual Fountain, represented in our engraving. As

will be judged, the design of this is extremely elegant, and its principle is both simple and scientific. It works by Heron's principle of the pressure of air, and the novelty lies in the application of that principle, so as to produce a fountain which can be kept constantly playing. The gilt reservoirs under the basin work on a swivel, and are reversible, like an hour-glass. When one has expended its power, the reversal of the reservoir at once sets the fountain playing again. For ball-rooms and parties this invention is very attractive. In

Christmas cards Mr. Rimmel is still unapproached, and his designers still continue to invent new boxes imitating all sorts of things, whose ultimate object is to conceal a bottle of scent or a cake of soap. The public characters which stand on little boxes are excellent likenesses, and the comic characters are very comic. In all these are some of those sweet drops with which Mr. Rimmel has for so many years made life less burdensome. An abundant variety of crackers, some of them very tasteful, may be also mentioned as seasonable articles in this stock.



LOW, SON, AND HAYDON.

WHENEVER we have had the opportunity of examining any of the manufactures of this firm, we have always had occasion to remark on the elegant and finished style in which their fancy goods are sent out. They have this year some boxes of soap, which are of especial note in this respect, particularly as regards the designs represented on the covers. Some handsome pasteboard caskets, containing a bottle of perfume, are also very attractive, each being embellished with a portrait of a French or German general, remarkable for artistic power both in colour and drawing. We may also draw attention to Messrs. Low, Son, and Haydon's pretty satin-wood boxes containing cosmetic.

JUDSON'S HANDY STAND.

MESSRS. JUDSON AND SON have celebrated the season by introducing a compact little stand of polished wood, on which are arranged a bottle of gum as the head centre, with surrounding satellites in the shape of a bottle of red ink, ditto violet, a bottle of cement, and some golden oil. We scarcely see the use of the last named-article in an office, though for home use it may be more in its sphere. The required brushes are added to complete this business-like assortment.

THE STEREOSCOPIC COMPANY.

CHRISTMAS itself is not more certain to appear, than is now the Stereoscopic Company to meet the season with a variety of novelties, invariably clever, and always popular. Often scientific, always amusing, and never silly, their introductions have often obtained a lasting position, besides a mere ephemeral success. This year the company is more profuse than ever in the abundance of their productions, some of which are very striking indeed. The Temperament Tester is a delicate instrument, from which endless fun can



be produced in a party. By the ingenious application of a physical law, this pretty little apparatus seems to indicate the relative warmth or coldness of the human heart. Struck with the idea, a clever writer has constructed with it a thrilling situation for a novel or drama, the haughty beauty testing by this instrument the value of her admirers' oaths. A novelty which will always be saleable, is Woodbury's Chameleon Barometer. This is not a deception; it is a very sensitive meteorological instrument, and well suited for chemists' sale. It indicates atmospheric changes most delicately by variations in the colour of a paper disc. These barometers will sell furiously at their low price of a shilling. The Divining Cards we must speak of as the cheapest and most puzzling novelty of the season. Twenty-seven photographs of eminent personages, on handsome cards, for five shillings, are not dear alone. But with these a piece of necromancy can be worked, no less mysterious to the performer than to his audience. The trick is based somehow on the wonderful powers of number nine and its multiples. The Opaque Penetrator, by an

optical delusion, shows a hole clean through any body however solid. The Electro-Silvering Apparatus is very complete and interesting. The Lively Turtle comes from Japan. It is dear, but its life-like movements are astonishingly true. We have not exhausted the company's list, but we have only space to name the rest of their clever novelties. These are the Princess Louise Fan, the Transforming Pedestal, Triple Illuminators, the Mysterious Chain, the Cannon of Peace, Where is it? and A Christmas Greeting. We should add that each of these is put up in a most attractive manner, and that a handsome discount is allowed to chemists and druggists.



ALICINE.

A PERFUME which has won the favour of the fair Princess Alice, would be secure from any adverse criticism in this journal, even though its sweetness had been far less evident than in this case. As it is, we can but agree with her Royal Highness, and we must also congratulate the inventor (Mr. E. Thompson, of Dover) on the happiness of his nomenclature. The condensed sweetness of an English lady would defeat out of all markets French extracts or Asiatic essences.

J. H. WHITBY (R. B. EDE AND CO.)

IN Mr. Whitby's new establishment in Worship-street, a small room has been fitted up as a show-room, and at this season, and with his multifarious products, that small room is a little den of beauty. Messrs. R. B. Ede and Co. are ancient, Mr. Whitby is modern: the union ensures the combination of classic grace with modern usefulness and cheapness. Such is the characteristic of Mr. Whitby's stock.

F. S. CLEAVER.

MR. CLEAVER'S novelties are this year confined to new designs in and on boxes, some of them very handsome. We notice a great variety in these, both in style and price. They generally contain some perfume, soap, and a sachet. Mr. Cleaver has also his novelties of former years to fall back upon.

PEEK, FREAN, AND CO.

THERE is no feature more characteristic of Christmas time than the extraordinary relish with which both old and young enter into the occupation of eating. Manufacturers are well aware of this tendency, and therefore their daintiest novelties come out generally at Christmas time. Retailers should think of this fact also, and prepare for it accordingly. From the great factories of Messrs. Peek, Frean, and Co., at Dockhead, biscuits are sent out to meet every kind of hunger, but our present concern is Christmas hunger. For this universal ailment a very luxurious provision is made. Tins of the choicest varieties of biscuits are put up in most showy styles, to retail at 1s. each, and they contain no inconsiderable quantity. Messrs. Peek, Frean, and Co. have several novelties. We decline to be surprised at anything in these days; but if we had not made that rule, we should wonder how these biscuit-makers managed to get such beautiful shapes and flavours out of such fragile materials as they have to work with. Their new cocoanut biscuits represent the well-known flavour perfectly, and are made into the most crisp and tempting little cakes one can imagine.

CADBURY BROTHERS, (BIRMINGHAM).

THE handsome drawings which Messrs. Cadbury introduced last year on their boxes of chocolate creams were good enough to last for several seasons; but this year we have a new set of pictures, fully equal to the others in artistic power. No one can fail to be struck with the cleverness of these pictures by the truthfulness of the drawing both of faces and animals. New this season, we believe, are the little packets of chocolate on the wrapper of which raised pictures of birds and butterflies, beautifully coloured, will attract those who might resist the chocolate. Other little packets of chocolate are also put up, smartly labelled with the name and representation of the fruit with which they are

flavoured. We have only referred to the outsides of these chocolates. The insides are beyond question: they are the manufacture of Messrs. Cadbury Brothers.

J. S. FRY AND SONS (BRISTOL).

MESSRS. FRY, no less than the firm we have just alluded to, have introduced the fine arts into the cocoa trade. No one can look at the samples of the two manufacturers without remarking that each may be proud of his competitor. Messrs. Fry's chocolate creams are in elegant white and gold embossed boxes, and are also put up in other styles, some of them being adorned with capital drawings. Fry's milk and cocoa is the novelty of the cocoa trade however. It is cocoa made into a paste with condensed milk. Boiling water only is needed, and the divine food in liquid form results. We must claim mercy if we confess that as yet we have had no time to test the virtues of Messrs. Fry's well-known Caracas cocoa.

THOMAS SMITH AND CO.

LAST on our list, but first among the providers for a special department of Christmas festivities, comes the well-known firm of Thomas Smith and Co., of the City-road, manufacturers of all the varieties of crackers, cosaques, and bonbons, which so abundantly add to the adornment and the merriment of many a Christmas supper-table. The number of sorts of these bonbons is almost infinite; but Messrs. Smith and Co. make them all; we had almost added more too. Certainly they introduce every season some new ones. The most charming of their new season's introductions, and perhaps the prettiest cracker ever brought out, is the "Butterfly." Pretty flowers and grasses come out of the open end of the cracker, and on these a butterfly is most naturally resting. Inside is a motto and fountain of perfume, or with the same outside a cheaper variety contains a bonbon instead of a bottle of perfume. The wild flower crackers too are very tasteful. Bijou bonbons are made with perfume fountains or other ornaments attached. The costume cosaques, first brought out by this firm, are still going, and a new floral cosaque, very chaste, is now introduced. It reveals a scented flower. We are bound to comment too on Messrs. Smith's beautiful gelatine work. Flags of differently tinted gelatines, fringed, and with emblazonments, or seasonable mottoes are very ornamental, and their gelatine flowers are scented and particularly elegant.



THE CHEMISTS' AND DRUGGISTS' DIARY AND PHARMACEUTICAL TEXT-BOOK FOR 1872.

THE publisher of the CHEMISTS' AND DRUGGISTS' DIARY AND PHARMACEUTICAL TEXT-BOOK FOR 1872, has issued his fourth annual volume, and once more asks us to review it in our "valuable and widely-circulated journal." We respond cheerfully, but what can we say of this fourth issue? We said of the first that it was good; the second we intimated was better; and the third, with rash recklessness, we described as best, regardless of the probability that one short circling year would demand from our exhausted vocabulary another and an ultra-superlative adjective. The young lady of a few years back was in the habit of characterizing her favourites as nice. Alfred Tennyson, the Falls of Niagara, strawberries and cream, the Psalms of David, Hyde Park, and the Reformation, all came under

the same qualification. But this adjective is not emphatic enough for the more advanced sisterhood who have replaced the "nice" young lady, and they have therefore explored the English language with the object of finding a satisfactory method of expressing their approval. The search has been rewarded by the discovery of "awfully jolly!" This illustration is encouraging, showing as it does that a great many more annual issues of the CHEMISTS' AND DRUGGISTS' DIARY may take place, and each improving on its predecessor without draining the supply of English adjectives to describe them. We have certainly not reached the "awfully jolly" apex yet, for the book before us is pre-eminently a business book; a diary expressly compiled for pharmaceutical tradesmen. Those who make constant use of the diary pages will appreciate the attention to their convenience manifested in the larger space, the excellent paper, and the blotting-paper, which last, however, they will only find in the best edition. With regard to the pharmaceutical letter-press we must regard the collection of foreign pharmaceutical formulæ a happy idea, well carried out. We notice in this department more than 200 formulæ not known to the British Pharmacopæcia, and there are some curious bits of information among this collection. There is a good Legal Summary, especially abstracted for chemists and druggists, and there are a great many tables, many of which are novel and very useful. A table of lacquers and a table of paints seem likely to be useful to country druggists. Some of the advertisements too are curiosities in their way, and we are glad to see that they are pretty numerous. We are sure the trade will support this very useful and cheap diary.

THE CHAMPIONS OF HOMEOPATHY.*

THE papers read at the Homœopathic Congress at Oxford last September have been published in pamphlet form by the secretaries. If, in so doing, we admit that they have done that which should be done, we cannot too strongly condemn their judgment in leaving undone that which they certainly ought to have done at the same time. The omission of the discussions which followed the reading of each paper is simply unpardonable, and robs the record of the half of its vitality. On the old principle, however, of contenting oneself with half a loaf when a whole one is unattainable, we accept the limited benefits offered to us, and proceed to examine the arguments advanced in favour of the homœopathic system by certain of its most accomplished advocates.

We cannot deny the value of the speculative faculty in the mind of man. Banish it altogether and science would rot. Every step in advance is a result of the wise exercise of this power, and now and then an immense stride is made when a man of learning grasps a great truth which no man before him had ever perceived. We can only with difficulty appreciate the truly poetic spirit of lofty daring which gave to such men as Copernicus and Newton the power to seize on the eternal truths which are for ever linked with their names. But let us mark that these men were not poets only; and of them, as of all, it may be said that their speculations were only valuable in proportion to the basis of deep investigation on which they were founded. Other men might have done the same work that was done by Copernicus and Newton, but lacking their genius or temperament might never have caught the ideals which were presented to their minds; but, assuredly, without the work for a basis, none could ever have built up the fabrics which reason and metaphysical aid combined taught them to build. There is nothing more easy than to be a mere theorist, while there is nothing needs such earnest study as to theorise from sound bases.

We by no means assert that homœopathy is altogether untrue; nor do we deny that it has done a good work in the field of medicine. But the honour of a scientific position cannot be conceded either to it or to its founder. Even supposing Hahnemann's theory to be absolutely and

universally correct, that all diseases may be cured with similars, and can be cured by them only, it would still remain a fact that his theory would be nothing more than a lucky guess, for it was not founded on broad principles of induction, tested and proved in every point. His investigations and those of his followers must strike every candid student as being rather the ingenious arguments of partisans than the honest efforts and rigorous experiments of patient scholars seeking only after truth.

This fatal weakness is but too evident in all the papers before us. The opening address by Dr. Henry R. Madden was a model of composition. It was a clear and attractive exposition of the laws of physiology according to the most recent investigations, and it abounded in the most apposite illustrations and in pithy sentences. It was a masterly summary of the wonderful knowledge which we possess, little though it is, comparatively, respecting the external manifestations of the living organism. The various organs, nerves, and foods, were likened to the machinery, the workmen, and the raw material of some large factory, the last of which had to be fabricated into more complex bodies. Force is communicated to the "germinal matter," which acts on the "pabulum," and if all goes well the man is healthy. But the germinal matter may, by the fault of some almost inappreciable cause, act wrongly and produce a different, or in other words a diseased condition of some part of our system. This leads to a consideration of the action of drugs, which are to be regarded as stimuli to the germinal matter. But to forecast the precise effect of a drug, it is not sufficient to know its action on the healthy body, for it may act very differently on the same part when diseased. "It is at this point," we now quote Dr. Madden's own words, "that Hahnemann meets us with his invaluable discovery, viz., that a drug invariably produces in the diseased organism a series of changes precisely opposite to those which it produces in health, and that consequently it removes from a diseased part the entire series of symptoms which it would excite in the same part when healthy; and hence his law for the selection of a drug is 'Similia similibus curentur.'" Now Dr. Madden is as incapable of wilful perversion of truth as an archbishop, but unconsciously and in perfect good faith he bends all his arguments and scientific facts, and makes them point to this one spot where "Hahnemann meets us;" just as the good archbishop, when he preaches a charity sermon, steers straight for the collection through all the mazes of his rhetoric and theology. Surely Dr. Madden must see that after all his elaborate and clever arguments, he only reaches the affirmation, without a tittle of proof, that Hahnemann made a certain discovery, of which, opponents say, all that was valuable in it was known centuries before Hahnemann.

After the President's address, Dr. Black, of Clifton, read a remarkable paper on "Posology." In this he attacked Hahnemann, dynamization, and infinitesimal doses as much as any man dare in such an assembly, without being denounced as a traitor. Hahnemann taught that each dilution of a medicine accompanied by shaking or trituration developed its medicinal power, or, as he would express it, set free its spiritual character. This theory of course has nothing to do, necessarily, with the law of similars, but it grew out of that, and is undoubtedly the guide of practice of a very large number of homœopathic practitioners even at the present day. To ask for proof of such a fancy would, in itself, be absurd. The absolute proof of its falsehood can be shown at any moment, and yet these practitioners go on handling the 30th, and 60th, and 100th dilutions with feelings of terror rising as the dilutions rise. Dr. Black believes that all the physiological actions of a remedy can be gained by doses confined within the third decimal dilution, and he wisely argues that if this plan were adopted a much greater pharmaceutical and therapeutic simplicity would result. In the discussion which followed nearly all the speakers seemed to sympathise with the views which Dr. Black had expressed, and it is to be hoped that a more rational practice will obtain before long among homœopathists than a system founded on this childish fancy.

The remaining papers were on surgical subjects. Dr. John Moore, of Liverpool, read one on "Ovarian and Uterine Disease;" Dr. Dunn, of Doncaster, "Thirty Years' Experience of Homœopathy applied to Surgery," and

* "Transactions of the British Homœopathic Congress." Published by authority. London: Henry Turner and Co.

Dr. Wynne Thomas, of Birmingham, on the "Relation of Homoeopathy to Surgery." Strictly speaking, the term "homoopathic surgery" conveys no more meaning than "homoopathic grocery" would. But these gentlemen very fairly showed that in the adjunctive treatment homoeopathy might play a very useful and important part, and that therefore the term was not altogether misapplied. In the case of a broken limb or suchlike accident we can but approve of the reasonable treatment advocated by Dr. Dunn, avoiding as far as possible the varying employments of stimulants and sedatives and such indigestible and health-disorganizing accessories. Dr. Thomas related some remarkable cases of cure, not the least astonishing of which were two instances of corns cured by taking *thuja* 6, and *natrum mur* 6!

LIFE-SCIENCE.*

It is difficult in a journal like this fairly to review such a work as the one we have now before us. We do injustice to the author unless we consider the full scope of his inquiry, and in so doing we somewhat overstep the limits within which our work should be confined. Nevertheless, it may be regarded as certain that no careful student of any of the natural sciences has failed sometimes to reach some part of the shore of his study, and from thence to look wistfully upon the great ocean of life-science which meets him there, full of mysteries insoluble, at least in this world, and yet not the less full of beauty and harmony and fascination. To every individual, existence is an unfathomable mystery. The distance between the meanest idiot and the loftiest philosopher is lost sight of in the presence of the enigma of life, so vast is the space which separates both from its comprehension. This great study, meeting us everywhere, can neither be explained nor ignored by science, and the leading object of these "Thoughts on Life-Science," if we may summarise it in a sentence, is to define the extent and limits of scientific investigation and speculation. There are evident in the scientific world two very opposite phases of so-called thought. One is a leap in the dark from a sound basis into the unknown chasm of wild imaginings, and the opposite is a distinct negation of all revelation not confirmed by experiment. Singularly enough these extremes generally meet. Mr. Thring's treatise is a most masterly, eloquent, and logical appeal for science to be true to itself and reverent in respect to subjects beyond its grasp. We shall present one or two examples of the author's style, as we endeavour to give an idea of his argument.

First, we have an essay on language. The power of words to express and convey the meaning of the mind is dwelt upon, but their weakness in this respect is also pointed out:—

"The most eloquent as well as the dullest speaker will confess, if challenged, that there is within him that which baffles expression, that with all his practised power he has to struggle to put out in a far off imitation of the reality. A million people see the frosty West rich with the dying splendour of December's sun, wavelets of light that neither rest nor move, so subtle in the sense of glory, ripples innumerable, with here and there a sweep of delicate green between their changing gold. All see it, see it at once, but what a mockery it is to ask the tongue to put in words what everyone has seen again and again, those last breathings as it were of colour and regretful love, which the departed sun sends back as keepsakes to the left behind. This is one instance, but everything is an instance; thought is no more of necessity words, than it is paint; and the art of description is as much a different thing from the possession of thought as the art of painting. Words and paint are not thoughts in an advanced stage of growth, but devices by which skilful artists succeed in reminding men of thoughts, and of the perceptions received by the mind."

Another essay follows on the imperfect power of the mind to grasp the realities which lie before it:—

"Man finds himself in the presence of realities so vast that, like mountains, they overtop him on every side, and close with gigantic walls his horizon. But evident and visible as they are he gets no nearer to them, and never diminishes their perceptible distance. They are very close, and very far off at once. As he advances they recede, and an illimitable ignorance imprisons man by being illimitable. Infinity, Eternity, Self-Existence, Creation; wherever the mind turns it is confronted by these."

"Thoughts on Life-Science." By Edward Thring, M.A., Head-Master of Uppingham School. Second Edition. London: Macmillan.

The mind of man is powerless to grasp the evident realities which surround it, and of the little fragments which it can contrive to seize, words are inadequate to express the meaning fully. Now the inquiry takes a new turn. What are words? asks the author. What do we really know of them?—

"Science answers promptly that they are undulations of air, and talks of laws of sound, and states the facts observed about air and sound, and tickets them, and goes off to something else, as if a door had been opened and an explanation given, instead of a door shut and the truth behind it. What is air and sound? Why should the wind which dries a puddle, or overthrows a tree, by any conceivable movement or pressure, be anything but wind in motion or wind pressed? *Ex nihilo nihil* has long been an axiom in science. Air, therefore, as long as nothing is added to it remains air. How comes it then that the movements of a box called a mouth, without adding anything that can be seen, touched, weighed, measured, or tested in any way, should knock life and spirit meaning into air; and that air, thus made the vehicle of what can neither be seen, touched, weighed, measured, or tested in any way, should rush into a twisted cavern, called an ear, and then deposit its strange, impalpable, burdenless burden of thought in the thought-reservoir of another mind? What is it that is in the air, when the air is words, which was not in the air before? Science answers, nothing. Yet there is what we cannot tell, though we feel it. There is a birth from man's mind, graspless and viewless like his mind, and no instrument can in any way reach it."

This wonderful power which the mind has of bridging over the space between one mind and another, of creating a life as it were in the material air, is still more strikingly exemplified, as the argument goes on to show, by the fact of emphasis on different words in a sentence varying its meaning, and again by the written or printed characters, by the aid of which a man of to-day may be brought mind to mind with Moses four thousand years ago. As these words or written characters are clear evidence of one mind to another, so to the discerning mind is every atom of the material creation, as clear evidence of its Creator. Material though it is, it conveys a spiritual language just as surely as the material air conveys mental images from one mind to another.

This is a brief sketch of the opening of Mr. Thring's argument. So far it has been shown that science can only begin by admitting that there are subjects beyond its reach. Now he proceeds to show that at every step science must acknowledge the constant presence of a Supreme Creator, and its own utter inability to comprehend, far more to discuss, the laws whereby the universe is governed. The glories and triumphs of scientific research are dwelt upon with enthusiasm, but these must not challenge an equal authority with divine revelation:—

"If all this is a lie, or a mixture of truth and lies, then a lie or a mixture of truth and lies is the one continuous life, the great living power, which the highest intelligences visible on earth have lived on, now live on, have grown by, now grow by. To believe this is, indeed, to have a capacity for belief. Difficulties of course there are. Beings like us with wingless minds, shut in by the wall of time, can scarcely thread back the mysterious path of the teeming generations behind us, as century by century it climbs up into the dark thousands of years which wrap round the cradle of our race. Difficulties of course there are; but the calmly sceptical mind finds it much easier to take and digest Scripture with all its difficulties, than the dish which enthusiastic philosophers, like children let loose and roasting potatoes at a fire of weeds, relish so keenly, because it is their own cookery,

We could wish that the author of an argumentative book like this had taken a little more pains to keep clearly before his readers the consecutive steps of his logic. It is often difficult to trace any connection between one part of the book with another, or with the whole; and the worth of the book is not inconsiderably diminished if the reader regards it as merely a collection of detached essays. But as a powerful argument for the right positions of religion and science, and as a book full of noble and suggestive thoughts, clothed in eloquent language, we heartily commend these "Thoughts on Life-Science."

MORTALITY STATISTICS.*

THEORETICALLY there cannot be the slightest doubt of the advantage of the most minute investigation into, and acquaintance with the statistics of mortality, such as those which are published by the Registrar-General. When it is known that in any district the death-rate is higher than the average, it may be regarded as certain that some steps

* "Mortality Experience of the Prudential Assurance Company in the Industrial Branch, for the years 1867-8-9 and 1870." By HENRY HARBIN, Secretary to the Company. London: C. and E. Layton.

will be taken to ascertain the cause of this extravagance, and it may be at least expected that afterwards a second series of steps will be taken to remove the cause, and thus reduce the danger. Likewise, the same anticipations may be applied to any abnormal developments of disease. In order to stimulate the local authorities, which have been organized all over the country, we have Government departments presided over by the most able men, who write to local boards and Poor-law guardians in the most vigorous manner, whenever the Registrar's returns indicate anything wrong with the death-rate in any particular district. Surely we might hope from this state of things that in the thirty-three years which have elapsed since this system of registration was first instituted, some reduction in the average rate of deaths would have been accomplished. But the facts show the reverse. In 1838 (the first authoritative statement) the average in England was 22.44 per 1,000; in 1869 (the latest report which has appeared) it was 22.67 per 1,000, and the average of the thirty-two years 1838-69 was 22.42. How can this be explained? The country is undoubtedly in a far better sanitary condition than it was thirty-four years ago, and yet no improvements seem to affect the death-rate. Lower it in one district, and it rises in another. Reduce the triumphs of one disease, and another makes inroads to restore the balance. Doubtless the benefit is gained, though it may be necessary to look beneath the surface, and we apprehend it is somewhat in this way. Our population has vastly increased in those years, and it is always the case that the death-rate is higher in thickly, than in thinly populated districts. The fact that in England it has remained stationary should be regarded as no slight benefit, and the proportionate increase which might have been looked for under normal circumstances must be credited to the Registrar-General.

The value of any statistics furnished by an insurance company must be slight when compared with those of the same character which are provided by the Registrar-General—slight, that is, for general statistical value. Thus, for example, to take the first table given in Mr. Harben's book we find that in 1869, 2,042 of their customers died of zymotic diseases, and 2,047 of constitutional diseases. (In the classification of diseases the Registrar-General's system is followed.) Now in England in the same year 110,601 persons died from zymotic diseases, and 86,730 died from constitutional diseases. Therefore it will be seen that if we should accept the experience of the Prudential Assurance Company as indicative of general facts, we should be led to an erroneous conclusion as to the relative fatality of these two classes of diseases. This is an instance from the first table in the book, and doubtless there are many more such discrepancies if it were needful to produce them.

This first short table is the summary of the company's results, and it will show conclusively their weakness as statistics for guidance if we pick out from it the results for 1869 and place these side by side with the figures of the Registrar-General. The company's results are based upon 9,921 deaths in that year, while the Registrar-General has 494,828 to deal with it:—

	Registrar-General.	Prudential Assurance Co.	Proportional.
	R.-G.	P. A. C.	
Zymotic diseases	110,601	2,042	.223 .206
Constitutional	„	86,730	.175 .206
Local	„	199,976	.4879 .492
Developmental	„	74,313	.150 .065
Violent deaths	... 16,497	309	.033 .031

A comparison of the proportional figures shown in the foregoing columns will be sufficient to show that the results which have been deduced from 35,000 deaths in four years, and which are recorded in this volume cannot be fully relied upon to furnish accurate data for statisticians. We are sorry to say that, with such an element of uncertainty pervading the whole volume, we are unable to see exactly in what way its publication can aid either "the actuary or the medical profession," to whom it is especially recommended. And yet there are tables in it from which an industrious compiler can gather some interesting facts; especially the tables which separate the various classes of mechanics and others engaged in industrial pursuits, and show to what diseases each is most likely to succumb—that is, of course, as far as these 35,000 deaths afford indications. It is

impossible to praise too highly the perfect manner in which the company preserves all its statistics, and is thus able to analyze them in the elaborate manner in which it has been done for this book, and the eleven large and beautiful coloured diagrams which illustrate the tables are so excellent that we cannot but wish some industrious labourer would prepare in the same manner a similar series founded on the official returns.

CHAMBERS' CHEMISTRY.*

A NEW edition of this well-known elementary class-book of chemistry has appeared. The treatise was first of all, written by the late Dr. George Wilson, Professor of Technology in the University of Edinburgh, afterwards edited and adapted to the new notation by Dr. Stevenson Macadam, and now revised and very considerably enlarged by the Natural Science Master of Eton College. The fact that so many able eyes have superintended its progress, is a good guarantee of accuracy in all its details.

The new edition contains 150 pages more than the last, and we can bear witness to the very scrupulous care which Mr. Madan has taken to make the improvements required. Especially we notice the augmentation of interest and value which he has introduced into the work by a short notice of the history of each of the elements with which he deals. New discoveries and new facts are frequently introduced, and while we notice eliminations in a few instances, a fuller treatment is given in many other cases. Thus, for an example, to the metal thallium seven lines only were devoted in the previous edition, while in this, a page and a half is required.

The book, as its title implies, goes no further than inorganic chemistry. We are not quite prepared to say that the study of chemistry in two sections like this is an unmixed evil, for we do not believe that the investigations into organic chemistry have yet advanced far enough to enable any author to present the science, homogeneously, if we may be permitted the use of such an ugly word. But it will be a glorious day for students when the hour and the man for such a work shall arrive. Who is there who studied chemistry some ten, twenty or thirty years ago, who has not felt that no inconsiderable amount of labour has been required since to *unlearn* the theories and ideas which got into his mind, either with the treatises that he read, or through them? Not the least troublesome error to get clean rid of in after life, is the conception of a hard and fast line separating inorganic from organic chemistry, a conception that the elements themselves respected this hard and fast line, and that though in some sort of way of the same nature, the atoms used in one division were never elevated or degraded as the case might be, to use in the other department. We do not say that anyone ever held that theory exactly, still less that it has ever been expressed in a book.

But we say that amid the numberless semi-conscious and half-erroneous impressions which fix themselves on the mind of youth, this is one of the most frequent, and one of the most permanent, if chemistry has been studied; especially if books, unaided by experiments, have been the only source of instruction. We fully believe that at present this division of chemistry is convenient and necessary. But we as fully believe that it will not be so long; and when Nature has been coaxed into parting with a few more of her secrets, we shall look for that thread which will string together all manifestations of chemical combination and the development of matter in the animal and vegetable kingdom. If we were compelled to teach chemistry to some budding intelligence, we would hardly set him on a book like this before us first of all. We should be afraid that he might gather from it an idea that nature worked in her secret recesses much as a workman in a laboratory—a book of formulæ before her with fixed rules to which she had occasionally to refer. But we should like him to commence his study with a true notion of the chemist's work; of the long investigations which preceded the discovery of the laws and of the true method of making experiments. For

this object we should send him through Faraday's "Lectures on the Chemistry of a Candle," as an incentive to interest in the more laborious study which must follow. To commence the hard work of chemical study, this volume of Chambers' "Educational Course" is undoubtedly well adapted. One of its chief merits is that it very precisely defines the laws of chemical affinity and combination, and the chapters on heat, light, and electricity are terse and not burdensome. It is one of the cheapest works on chemistry which we have, and as such commends itself to chemical classes, for which employment it is specially adapted by its division all through into distinct sections. It is fairly illustrated throughout, and in this new edition a coloured diagram of spectra is added, showing the character of the light obtained from various sources.

TRADE ETHICS.*

If we criticise unfavourably the essay which now lies before us, addressed to men of business by a preacher, it is not by any means to be understood that we place ourselves in opposition to the author's advocacy of strict commercial morality. *Cela va sans dire.* But our complaint is that the writer has chosen his subject as one whereon to hang some wild rhetoric about "the essential dignity" of trade, the greater part of which is mere "sound and fury, signifying nothing." Mr. Brown must be eloquent at all costs, and therefore he opens his essay with some very superficial remarks on feudalism, and the stigma which that system placed upon commerce; a stigma which, he says, "survives in a measure as a malignant influence to this day." Mr. Brown, therefore, comes forward as the champion of poor stigmatized commerce, and rescues it from the "malignant influence" in a series of such ultra-nonsensical sentences as this, "more human courage, strength, daring, constancy, and genius have been expended and nourished in commercial adventure and activity than in statesmanship or war." Further on we are told "that the original and fundamental idea of commerce was ministry and not gain," a statement which evidently requires some ingeniously contrived support. We are therefore led back to tribe-life when commerce originated in the ministry of brotherhood, as, for example, (we are not quoting) when Joseph's brothers sold him to the Ishmaelites. It might be nobler if this idea of commerce were indeed true; it may be that it was the case once; but from the time that Esau sold his birthright to Jacob, it has not been so. As a matter of fact, men do minister to each other. Planters grow cotton, sailors navigate the ocean, shoemakers make shoes, and chemists and druggists make pills, and thereby serve their fellows. But however pretty the opposite theory might be, they unquestionably do these things for gain. Why, therefore, introduce into a business man's essay such Utopian notions? As flattery, it is certainly such as most commercial men would repudiate. So much for "the essential dignity" of trade. As we said, we are not the advocates of commercial immorality, and therefore we must necessarily agree with most of Mr. Brown's remarks in the remaining pages of this little book. But we regret to say that through them all we scarcely find an original idea or any gems of thought which are bright enough, in our opinion, to justify the publication of the essay.

DR. LIVEING ON SKIN DISEASES.†

THE publication of a second edition of Dr. Liveing's valuable little work on the treatment of skin diseases gives us the opportunity of writing a word or two of well merited praise concerning it. It is a very modest looking little book, and its author has not attempted any discussion of the conflicting opinions which, in many cases, are maintained by great authorities as to the causes, the lines of demarcation, and the treatment of some diseases of the skin. In very sum-

mary fashion he describes the chief characteristics of those ills which skin is heir to, or which it acquires by other than hereditary means. In each case a course of treatment is prescribed, and particular care is manifest to indicate the cases which more especially require general or local treatment. Every one knows that a great variety of skin diseases are presented to the notice of the chemist and druggist. They are especially frequent among the poor, in consequence of the want of cleanliness which so often unhappily prevails among that class. Dr. Liveing would probably shudder at the thought of encouraging counter practice, but for all that we can confidently recommend his little book as a most useful adjunct to those chemists and druggists whose advice is so often sought. Every physician, if he be humane, would surely prefer that even counter practice should be accompanied with intelligence. Dr. Liveing adds a hundred formulas to the end of his book, the medicinal value of which we do not question; but here and there a sublime indifference to pharmaceutical possibility is manifested, as for instance:—

(54.) Pilula Acidi Carbolici.
R. Acidi Carbolici, gr. j.
Pulveris Glycyrrhizæ, q.s.
Mix.

In his formula for cold cream (80) he orders oil of almonds, 1 lb.; white wax, 4 ounces; rose water, 1 pint. This is by far too much rose water, and it is a pity for the appearance of the ointment that spermaceti should be ignored. These are matters of very trifling importance, however; we commend the work as a very useful treatise on skin diseases.

BEETON'S MEDICAL DICTIONARY.*

THE reader will hardly think we are serious when we announce that, under the above title, Messrs. Ward, Lock, and Tyler, have published a shilling book, which is a marvellous epitome of the medical, chemical, and pharmaceutical science of the present day. We have examined a great number of the articles, and we can but express our astonishment that so difficult a task should have been accomplished so thoroughly and so accurately. We have never advocated the careless dissemination of scraps of medical information. We know how dangerous it is, for example, to announce the virtues of opium or chloral hydrate, or to publish a statement that arsenic is an excellent remedy for skin diseases. Detached portions of the book before us would no doubt come under the condemnatory criticism which such a recommendation would call forth. But these by no means represent the book as a whole. And however much we may dread the results of imperfect medical knowledge among the general public, we have a much stronger objection to the limitation of physiological and pathological science strictly to the profession. Looking at Beeton's "Medical Dictionary," therefore, as a little encyclopædia of information on certain subjects, and not simply as a guide to the treatment of diseases, we have no hesitation in recommending it. It contains probably more than a thousand concise articles on the subjects we have named; it gives the pronunciation, and generally the derivation of technical names; and, although of course exceptions might be taken, it gives as a rule under each title a fair summary of the state of modern knowledge concerning the same.

BEASLEY'S POCKET FORMULARY.†

THE ninth edition of this well-known and valuable chemists' companion has just appeared. It is now adapted to the British Pharmacopœia of 1867, the last (8th) edition being based on the Pharmacopœia of 1864. We need scarcely remind our readers that the book is a perfect encyclopædia of formulæ collected from the best sources.

* "Buying and Selling, and getting Gain." A Pastoral for the Times. By J. BALDWIN BROWN, B.A. London: Hodder and Stoughton.

† "Notes on the Treatment of Skin Diseases." By ROBERT LIVEING, A.M., M.D. Second Edition. London: Longmans.

* Beeton's "Medical Dictionary." London: Ward, Lock, and Tyler.

† The "Pocket Formulary." By HENRY BEASLEY. Ninth Edition. London: Churchill.

Pharmaceutical Meeting.

BLOOMSBURY-SQUARE, LONDON, DEC. 6TH.

A FAIR attendance, and an excellent supply of pharmaceutical material characterised this meeting. The President, Mr. HASELDEN, was in the chair.

CABINET FOR DISPENSING LABELS.

Dr. TILDEN exhibited to the meeting a cabinet for holding labels on the dispensing counter, which had been invented by Mr. Shephard, pharmaceutical chemist, of All Saints'-road, Westbourne-park, a former student at the institution. He said it was well known that labels often got into a dreadful state of confusion. The principle of the cabinet in question was very simple. Each compartment was fixed on a pivot, and when pulled forward the front part of the case came down and exposed the labels, so that they could be easily removed. When a label had been taken out the door would fall back, in consequence of being weighted at the back. The arrangement was, in fact, self-acting, and it appeared to him (Dr. Tilden) a very capital one. The cabinet before the meeting was only a model.

In discussing it, several speakers seemed to misapprehend its object, and to regard it as a case for all kinds of labels, instead of for dispensing labels exclusively. Mr. Hills thought it a useful arrangement and quite new.

PHARMACY IN NORTH GERMANY.

A short discussion between Professor Attfield, Mr. Walter Hills, and Mr. Greenish then occurred. Mr. Greenish stated that there was no society in North Germany corresponding to the Pharmaceutical Society in England. There was an association of chemists in Berlin, but its meetings were rather for trade than for scientific or educational purposes.

THE SUBSTITUTION OF PROPORTIONAL OR RELATIONAL NUMBERS FOR SPECIFIED WEIGHTS AND MEASURES IN THE DESCRIPTION OF PROCESSES IN THE PHARMACOPEIA.

Professor REDWOOD read a paper with the foregoing title. In opening his paper, Dr. Redwood remarked on the admitted superiority of the metrical system of weights and measures to our own; but he thought the time had not yet arrived when, with regard to medicine, it would be desirable that the change should be made. It would, he thought, be desirable that the transition should be made gradually.

There were two ways in which a gradual change might be introduced. One was to attach to each of the formulæ of the Pharmacopœia, as now constructed, a separate column of figures, representing the equivalent weights and measures according to the metrical system, leaving it to the operator to adopt whichever system he may prefer; and the other would be to substitute proportional or relational numbers for specified weights and measures, such numbers being equally applicable to either system.

There were insuperable objections to the adoption of the first proposal; for to carry it out properly, every weight and measure referred to, with the description of the processes, and of the tests, must be named in equivalent figures in the metrical system, and this would be found exceedingly cumbersome.

The principal difficulty in the way of the second method arose from the fact that the ounce is not a simple multiple of the grain; for as the quantities represented in several of our processes, as they now stand, are expressed partly in grains and partly in ounces, it is sometimes impossible to give the proportions of the ingredients in whole numbers. Another difficulty would be the necessity of referring to two different standards, one for the solids and the other for the liquids; for not only would this entail the use of different words to indicate the signification of the numbers when so applied, but in many cases the numbers would not represent the proportional relation of the parts. These difficulties, however, might be met, and in a great measure obviated, by modifying the formulæ in some cases, and omitting the application of the method in a few instances. The term *part* might be used to represent *weight*, and the term *measure* to represent *volume*. These terms are commonly employed with such significations, and if it was clearly defined that *parts*, when used in connection with the proportional or

relational numbers, always meant parts by weight, and that *measures*, when similarly used, always meant parts by volume, no mistake would be likely to occur. If, however, it should be thought desirable in some instances to be more explicit, the term *part* might be extended to *part by weight*; but it would be very undesirable to use more words than were absolutely necessary. In cases in which the terms *part* and *measure* would both occur in the same process, the *measure* would be the water-measure of the unit of weight, whatever that might be.

The following examples will serve to illustrate the application of the proposed method to some of the processes of the Pharmacopœia:—

Antimonial Powder.

Take of
Oxide of antimony, 1 part.
Phosphate of lime, 2 parts.
Mix them thoroughly.

Diluted Acetic Acid.

Take of
Acetic acid, 1 measure.
Distilled water, 7 measures.
Mix.

These are two of the most simple cases that would occur; the numbers used representing the proportions of the ingredients, in one case by weight, and in the other by volume. As another example, the process for *spirit of camphor* was quoted, in which an ounce of camphor is dissolved in nine fluid ounces of rectified spirit. The formula would be written:—

Take of
Camphor, 1 part.
Rectified spirit, 9 measures.
Dissolve.

In this case, whatever weight might be used to represent one part, the nine measures would be nine water-measures of that weight. It is obvious, however, that the numbers here are not strictly proportional numbers, for the spirit and camphor do not bear the relation of nine to one either by weight or volume. The numbers might be more correctly represented as relational numbers. They indicate the relation of a weighed quantity to a measured quantity. Even the terms *part* and *measure*, as used in this case, might be taken exception to, if considered apart from the definition already given. Viewed in that way, without reference to the definition, the terms would be more explicit, if for *measures* was written *unit-measures*, the *measure* being a measure of the unit of weight; but even this, without further explanation or definition, would not convey a correct impression, for the spirit, if estimated as spirit, is not nine measures of the unit of weight, but nine water-measures, or nine times the measure of the unit weight of water.

The terms *part* and *measure*, or any other equally and sufficiently concise terms, must be used conventionally, for the specific purpose required, and subject to a definition. When so used, the terms are convenient, and appear to answer the required purpose. They are applicable to either of the alternative systems of weight and measure, for while we have the grain and grain measure, the ounce and fluid ounce, or ounce measure, and the pound and sixteen-ounce measure, all of which are recognised and have long been used in this country,—the metrical system includes the cubic centimetre and the litre, which are the water-measures of the gram and the kilogram.

In some of the processes that are more complicated, difficulties in the way of applying the proposed method appear to exist, which, however, are easily removed by slightly modifying the arrangement of the formulæ. The process for chloroform, as given in the Pharmacopœia, is one of this description. The formula, as it now stands, includes not only the ingredients employed for the production of the crude chloroform, but also those used in the subsequent purification of the product. The description would be rendered more simple and effective, and, at the same time, better suited for the use of proportional and relational numbers, if the formula representing the ingredients contained only those used in the first operation, and the substances used in the purification were

merely named when referred to in the instructions for conducting the subsequent part of the process.

[The chemist will easily apply the method to the formulæ for chloroform and ether, and by placing them side by side with the formula as they now stand the Professor's ideas will be evident.]

Among processes the descriptions of which would require to be modified are those for the preparation of the alkaloids. The process for *digitalin* may be taken as a test of the applicability of the method in such cases. It would be given as follows:—

Take of

Digitalis leaf, in coarse powder	} Of each a sufficiency.
Rectified spirit	
Distilled water	
Diluted acetic acid	
Purified animal charcoal	
Solution of ammonia	
Tannic acid	

Oxide of lead, in fine powder

Pure ether

Digest 100 parts of the digitalis with 400 measures of the spirit for twenty-four hours at a temperature of 120° , then put them into a percolator, and when the tincture has ceased to drop pour 400 measures of the spirit over the contents of the percolator, and allow it to slowly percolate through. Distil off the greater part of the spirit from the tincture, and evaporate the remainder over a water-bath to the consistence of a soft extract. Mix this extract with 12 measures of diluted acetic acid, and digest the solution thus formed with 1 part of purified animal charcoal; then filter, and dilute the filtrate with distilled water until it amounts to 50 measures. Add solution of ammonia nearly to neutralization, and afterwards add 1 part of tannic acid dissolved in distilled water. Wash the precipitate that will be formed with a little distilled water; mix it with a small quantity of the spirit and 1 part of the oxide of lead, rubbing them together in a mortar. Put the mixture into a flask, and add to it ten measures of the spirit. Raise the temperature to 160° , and keep it at this heat for about an hour. Then add 1 part of purified animal charcoal. Put it on a filter, and from the filtrate carefully drive off the spirit by the heat of a water-bath. Lastly, wash the residue repeatedly with pure ether, and dry it.

If, with reference to cases such as this, it should be said that the instructions would be more easily followed in carrying out the processes if the quantities referred to were represented by specified weights and measures, the objection might be admitted without material detriment to the value of the proposed method; for these processes, the only ones in which such complicated instructions occur, are not given with a view to their being carried out by pharmacists in general, nor should they be undertaken by any but those accustomed to such operations, and to whom the modified instructions would supply all the information required.

There are, however, cases in which more serious difficulties are presented. There are a considerable number of processes in the Pharmacopœia in which the ingredients do not bear a simple numerical relation to each other, and several of these, containing powerful medicines, are very important remedies. Thus, we have *Liquor Arsenicalis*, *Liquor Arsenici Hydrochloricus*, *Liquor Atropiæ*, *Liquor Atropia Sulphatis*, *Liquor Morphiæ Acetatis*, *Liquor Morphiæ Hydrochloratis*, *Liquor Soda arseniatis*, and *Liquor Strychnia*, all containing 4 grains of the active ingredient in a fluidounce of the solution, or 1 part in 109.375 measures. In those cases and others of a similar description, as the proposed method is not applicable to the existing processes, it would be necessary to make the processes applicable to the method by altering the proportions of the ingredients. In the event of such an alteration being made in the medicines named, it would probably be considered desirable to make them all contain 1 per cent. of the active ingredient. But a proposition to that effect, although much might be said in its favour, would, nevertheless, raise some questions not to be overlooked. The existing proportions have evidently been adopted to suit our system of weights and measures. Four grains in the fluidounce, or half a grain in the fluid-drachm, are convenient proportions suited to the particular circumstances under which we have been accustomed to prepare, dispense, and administer the medicines. If the proportions were altered to 1 in 100,

we should simplify the numerical relation of the ingredients, but not the proportion of the active ingredients to the measures commonly used for dispensing and administering medicines, for a 1 per cent. solution would contain 4.375 grains in a fluidounce, or 0.5468 grain in a fluid drachm.

If this method were adopted in preparing the solutions referred to, and other preparations that would come into the same category with them, it would be necessary to provide measures of ample size graduated to grain-measures instead of fluidounces. Such measures are now supplied by dealers in chemical apparatus, but they are not in common use. Sets of grain-weights up to 10,000 grains would also be desirable. The ease and rapidity with which processes would be performed in which proportional and relational numbers are used would greatly depend upon using the same denomination of weight or measure throughout a process, and where measure as well as weight is indicated in the same process, using a denomination of measure that corresponds to the unit of weight, as, for instance, using the grain-measure in connection with the grain, and the cubic centimetre in connection with the gram.

One of the objects contemplated in the proposed change being the establishment of a more simple quantitative relation of the ingredients in compound medicines, it would be desirable in some cases to depart from the usual practice of measuring liquids. Therefore, in medicines containing solid and liquid ingredients, if the products be of such consistency that they would be prescribed and dispensed by weight, the liquid ingredients contained in them might be apportioned by weight, with the view of simplifying the proportions. Thus, for instance, in confection of opium, as now prepared, neither the opium nor the compound powder of opium is a simple proportion of the whole, because the syrup is used by measure; whereas if the syrup as well as the powder were ordered by weight, the proportions could easily be made simple and definite.

Confection of scammony would be treated similarly, and so also would the pill-masses which contain liquid excipients or essential oils. By adopting this and other proposed changes, we might obviate the necessity there now is of using the term "nearly" in representing the proportions of the ingredients in compound medicines.

It will be obvious that in cases in which the formulæ are intended to represent the quantities of the medicines ordered which are to be administered at one time, as occurs in the formulæ for *enemata*, reference must be made to specified weights and measures. In such cases, of which there are only a few in the Pharmacopœia, one of two methods must be adopted. We must either express the quantities of the ingredients by weight and measure, putting the two sorts of weight and measure in separate columns—a method I have already alluded to—or we may first describe the process by using proportional or relational numbers, and then represent the doses by weight or measure, according to the alternative systems.

There are two other classes of preparations in the Pharmacopœia, in which the processes include the apportionment of the doses—namely, the *suppositories* and the *lozenges*.

With reference to the suppositories, the formulæ for all of which are very simple, it would only be necessary to substitute parts for grains, in connection with the ingredients, and the weight of each suppository might be given in grams as well as grains.

For lozenges more considerable alteration would be necessary, but the processes might be simplified. One instance will illustrate the whole:—

Reduced Iron Lozenges.

Take of	Reduced iron	10 parts.
	Refined sugar, in powder	...	250 parts.	
	Gum acacia, in powder	...	15 parts.	
	Mucilage of gum acacia	...	30 parts.	
	Distilled water	a sufficiency.

Mix the iron, sugar, and gum, and add the mucilage and water to form a proper mass. Divide into lozenges, each of which shall contain 1 grain, or 6.4 centigrammes of reduced iron. Dry them in a hot-air chamber with a moderate heat.

The only remaining part of the processes and descriptions in the Pharmacopœia is that which relates to the applications of tests. There is no difficulty in the employment of proportional and relational numbers, provided the rule be

adhered to of always using the same denomination of weight or measure throughout a process; and when measure as well as weight is indicated in the same process, of using a measure that corresponds with the unit of weight. The quantities used in testing are always such as easily admit of the application of this rule, and, in other respects, only a few slight alterations are generally required.

Having now referred to the various conditions under which the substitution of proportional or relational numbers for specified weights and measures might be effected, the author submitted the proposition to the judgment of those members of the medical and pharmaceutical bodies who are anxious to make the British Pharmacopœia a credit to this nation, and available for use in all other countries.

The PRESIDENT said that the subject was a very important one, upon which he was not at present prepared to offer any remarks. From what Professor Redwood had told them, it was clear that to his mind an alteration might be accomplished without any great difficulty. He (the President) was inclined to abide by the decision of Professor Redwood until he had an opportunity of turning the matter over in his own mind.

Dr. TILDEN would recommend the adoption of the name "pond" for parts by weight, and "vol" for parts by measure. Each of these units must of course have a definite value, which must be distinctly understood. He should further suggest that the weight of a *pond* should be a decigram, which was about a grain and a half, and of course a "vol" would be a volume corresponding to that weight. He believed that the application of a name, specially employed for this purpose, would be likely to facilitate the use of the system. He protested against the introduction of any more chemical processes into the Pharmacopœia, inasmuch as in the majority of cases they were not followed by manufacturers, and it was well known that pharmacists were not in the habit of making chemical preparations for themselves. It was, moreover, an objection that, in the case of the alkaloids, the process must vary in detail on every occasion in which it was employed. Take the special case, for instance, of digitalin, which had been alluded to, or aconitina, or he might allude to aloes, with which he was specially familiar. The extraction of the crystalline principles from those substances would be effected by processes which would vary according to the quality of the crude drug operated upon, and other circumstances. Aconite, for instance, would yield a far larger quantity of aconitina sometimes than others. In the case of chemical preparations it was an objection to a certain extent to set out the ingredients one after another, as in the case of chloroform, which was represented in the paper. He knew an instance of a student going to work to make chlorate of potash, and getting the biggest pan he could obtain, and putting into it the lime, the carbonate of potash, the manganese, and then pouring on it the hydrochloric acid. There was a constant tendency to that sort of thing.

Mr. GROVES said there was room for improvement in the mode of stating the quantities in Pharmacopœial processes, but, with all due deference to Professor Redwood, he thought the proposed plan not sufficiently simple. He should prefer expressing proportions of fluids in minims or fluidounces, the whole compound equalling 1,000 of such. He should much regret adopting any system that would tend to necessitate the weighing instead of measuring fluid in dispensing prescriptions. The loss of time by such an arrangement would be something enormous, and become a very serious objection. In cases where solids were dissolved in liquids, the expression would be α grains in 1,000 minims. In mixtures of solids the grain would be the sole unit, and 1,000 grains the weight of the whole.

Mr. BLAND said it seemed to him that some of the difficulties as to the present state of the formulæ in the Pharmacopœia would not be removed or simplified by the alterations proposed. Like very many other persons who were advancing in life, he began to feel more and more a tendency towards a sort of conservative feeling, and he thought there was nothing so bad or so inconvenient for them as pharmacists as to be continually changing. If alterations in the direction suggested by Professor Redwood were to be made it must mean nothing more or less than this, that they must eventually adopt the metric system altogether. So long as the weights of solid substances and the measures of liquids

were divided on a totally different system, it would be utterly impossible so to arrange the parts and measures as to avoid confusion with regard to the quantities. He confessed he looked back with something like regret to the old pint of sixteen fluid ounces and pound of 480 grains.

Mr. WILLIAMS expressed his approval of Dr. Redwood's proposal.

Dr. ATTFIELD spoke strongly in favour of the metrical or some other decimal system, towards which we were all drifting. And he thought the proposal of Dr. Redwood was an important step in that direction.

Mr. ALLCHIN and Mr. LENTON also spoke to the superiority of the metrical system.

Dr. REDWOOD briefly replied. The terms *pond* and *vol* suggested by Dr. Tilden might lead people to think that special quantities were intended, and not merely proportions. He entirely agreed with Dr. Tilden's remarks on chemical processes in the Pharmacopœia, and he had opposed the introduction of some in the last edition. But Dr. Tilden's first illustration of digitalin was an unfortunate one. The digitalin of the Pharmacopœia was just what the Pharmacopœian process made it. He had not advocated the weighing of fluids as a part of his method, except in exceptional circumstances. He was desirous to elicit the opinion of practical men as to the general features of his scheme before he set himself to work out its details.

Dr. ATTFIELD read a paper contributed by Mr. John T. Miller, of Sheffield, on "The Estimation of Morphia in Opium," of which an abstract will appear next month.

A paper was on the list by the President on "The Syrup and Resin of Tolu and Tincture of Cinnamon," but as the hour for adjournment had arrived, Mr. Haselden said he would not read it, but would publish it, as if it had been read. By the courtesy of the author, we are enabled to print his paper in another part of this journal. There will not be another evening meeting until February 7th.

CHEMICAL SOCIETY.

PROCEEDINGS of the Chemical Society, Thursday, November 16th, 1871.

Dr. ODLING, Vice-President, in the chair.

The ordinary business of the Society having been transacted, the Secretary proceeded to read a paper "On Burnt Iron and Steel," by W. H. Johnson, B.Sc., in which the author commented on a former paper on the same subject by Mr. Williams, stating it to be his opinion that the steel became burnt through the agency of the carbonic acid present, and not through there being any free oxygen in the hottest part of the furnace. Mr. S. Bell had found that the oxidizing effect of the carbonic acid and the reducing action of the carbonic oxide went on simultaneously varying, however, with the temperature; so that if the carbonic acid were present in sufficient quantity, its oxidizing effect would exceed the reducing effect of the carbonic oxide, and the iron or steel would become burnt. An interesting discussion ensued, during which Mr. Riley mentioned several curious facts which he had observed during his experience. Mr. F. W. Hart then gave a description of an improved form of syphon, and finally the meeting adjourned until the 7th of December.

Proceedings of the Chemical Society, Thursday, December 7th, 1871.

Two papers were read at this meeting, which was a very full one, the chair being occupied by the President, Dr. FRANKLAND. The first was by Dr. J. H. GLADSTONE, F.R.S., on "Essential Oils, Pt. II.," in which valuable and exhaustive communication the author gave the results of his examination of the physical properties of the hydrocarbons and oxidized oils obtained from various essential oils. He considers that these hydrocarbons may be divided into three groups, the members of which respectively not only have the same composition, but also a closely-marked resemblance in their physical properties, such as the boiling-point, refractive index, dispersion, etc. An interesting discussion ensued, and then Professor H. G. Armstrong read his paper on "The Nitrochlorophenols, Pt. III.," in which he described the methods of preparation and properties of various chlorinated nitrophenols, and also of compounds derived from them.

Provincial and Foreign Reports.

[We shall be glad to receive from all parts of the world items of interest to our readers. Correspondents who favour us with reports of local meetings, &c., will please to condense them as much as possible; and when local newspapers are sent, we shall be glad to have the passage intended for our notice specially marked.]

HALIFAX.

HALIFAX CHEMISTS' AND DRUGGISTS' ASSOCIATION.

THE members of the above association celebrated the commencement of the fourth session by a dinner on the 7th of December, 1871.

After dinner, Mr. STOTT, President, took the chair. The report spoke of the apathy existing amongst the students with regard to their attendance at the Latin and chemistry classes, and regretted they did not avail themselves more freely of the means placed at their disposal for qualifying themselves for examination. The report further alluded to the honourable way in which the recent early closing movement had been carried out by the trade, so as to give more time for the young men to prosecute their studies. It detailed the strenuous opposition made by the Society against the compulsory poison regulations as well as the Government Poison Bill, and expressed the belief that every member of the Society endeavoured in the storage as well as the sale and dispensing of poisons to exercise that amount of care, judgment, and common sense which are after all the best and real safeguards for the public. The report showed the value and importance of associations banded together for mutual interest and trade rights. The activity and influence brought to bear upon the poison question was evidence of this; for the Council of the Pharmaceutical Society were anything but unanimous in their opposition, and some members were even plotting underneath against the chemists and druggists. It became a question for consideration whether reliance could be placed on that body as a guide and leader for the future.

The report concluded with expressing the belief that a better feeling amongst the members had been created by the meetings that had been held, that many mistrusts and jealousies had been dispelled, and trusted that the time would soon arrive when the petty fears and doubts would grow "small by degrees and beautifully less," and when the remuneration received would be more adequate to the responsibilities involved in such a calling. All that was required was faith in ourselves, and faith in the future.

Mr. FARR, in moving the adoption of the report, congratulated the Society upon having reached the fourth year of its existence, which showed that it was not a mere temporary affair, but was built upon a sound and firm basis. Had it done nothing else than shorten the hours of labour it would have deserved well at the hands of fellow-tradesmen. The motion was seconded by Mr. JESSOP.

Mr. STOTT, Sowerby-bridge, was re-elected President, Mr. Dyer and Mr. Farr, Vice-Presidents; Mr. J. Brierley, Treasurer; Mr. R. Brook, Hon. Sec.; with the following as Committee: Messrs. Hebden, Shaw, Jessop, Pollard, and Wood.

The PRESIDENT returned thanks for the honour a second time conferred upon him, remarking that he felt like an old stager amongst them, as he believed he was one of the original 400 gentlemen who first joined the Pharmaceutical Society. He touched upon the education of apprentices, and regretted to see so many failures on the examination day, and suggested that none should be taken unless they had passed the preliminary. He rejoiced at the failure of the Government to pass the Poison Bill, and advised the members to keep a sharp look out on the legislation next session as recommended by our member Colonel Akroyd. He strongly objected to the principle laid down by Mr. Wilkinson, that of deviating from the compounding of prescriptions as being perfectly unjustifiable; we ought to be very careful in carrying out the writer's idea, or great mischief might be the result. On the other hand,

it is the duty of the physician to see that proper quantities of the ingredients are ordered, so as not to place the dispenser in the unenviable position of having an interview with the prescriber, which is not often pleasant to either party. In conclusion, he was heartily glad to meet his brother-chemists once more; and the oftener these meetings occurred the more would the sharp corners get rounded off, and a better feeling exist. To those who did not choose to attend, all he could say was it was their loss, and not ours.

Papers were promised for the first three meetings next year by Messrs. Brook, Hebden, and Shaw.

A cordial vote of thanks to the President for his address brought the meeting to a close.

HULL.

HULL CHEMISTS' ASSOCIATION.

THE members of this Association held their annual supper on the evening of the 6th inst., at the Cross Keys Hotel. The arrangements had all been carried out by Mr. C. B. Bell, the esteemed secretary and treasurer. The company numbered nearly fifty. Mr. Atkinson Pickering was in the chair, and Mr. Anthony Smith occupied the vice-chair.

After the usual introductory toasts, Mr. G. WOKES proposed "Success to the Hull Chemists' Association," with which toast he associated the name of their worthy President, Mr. Atkinson Pickering.

The PRESIDENT, in responding, thanked the company on his own behalf, and more especially on behalf of the members of the association, for the kind manner in which this toast had been received; and he felt he should not err from the truth when he said the Hull Chemists' Association had already accomplished a great work during the year that had now passed (hear, hear). It was well known to the chemists who were present on this occasion, and probably to most of the tradesmen in the town, that a bill was brought into Parliament during the last session which was calculated seriously to interfere with the trade. He, with several other members of the association, went to London on the subject. They had received a very flattering testimonial for the opposition which they in Hull, and in the East Riding of Yorkshire made to the Pharmacy Bill of the Government; it had even been said they were chiefly instrumental in causing it to be withdrawn (applause). There were clauses in that proposed measure which it would be impracticable to carry into effect. He was sure there was no body of tradespeople who devoted more personal attention to their business than the chemists and druggists of this kingdom; but there were clauses in the bill to which he had alluded that would have enabled the Privy Council to pass such rules and regulations with regard to the management of the trade, which would have completely defeated the purposes for which they were intended. Not a member of the Privy Council knew anything about the nature or character of a chemist and druggist's business, and the rules and regulations such a body was likely to make were quite as much calculated to increase the number of cases of accidental poisoning as to lessen them. There was no punishment so great for a man who neglected his business as a case of accidental poisoning to occur in his shop. There was nothing so damaging to any man's prestige, so injurious to his business, as when a case of this description unfortunately happened. He considered that the chemists and druggists, as a body, ought to make such rules and regulations for the management and governance of their own business as the very varying circumstances of the trade required.

When he spoke to a body of men in the business they would know well enough what he alluded to, and he felt that one great object of the Chemists' Association was the establishment of a school of pharmacy, for the rising generation of pharmacists were far more likely to obtain that which the Government was anxious to procure than any code of laws or regulations that could be devised by the Privy Council.

Mr. HAMMOND then proposed the "Healths of the Vice-President, Hon. Sec., and Treasurer, and Committee of the Hull Chemists' Association."

The VICE-PRESIDENT said it was with a feeling of pride that he rose to respond to this toast, for when he looked

around that room he had reason to congratulate himself upon the fact that he, together with his friends Messrs. Staning and Bell (and Mr. Buru, who was absent), were the founders of this association. The good that had been wrought for the trade by this Society during the past year was a subject for congratulation to all its members, and he was proud to say the chemists and druggists of Hull had displayed that forethought and good sense to band themselves together in a bond of union to oppose the iniquitous measure that the medical officer of the Privy Council brought forward and smuggled through the House of Lords; and but for the opposition of this association, backed up by similar institutions in Manchester, Liverpool, and other towns, would have been placed upon the statute book of this realm. If they passively allowed such measures to pass as were not for their common weal, they would have no one to blame but themselves. He would be charitable enough to believe the medical officer introduced it through an ignorance of the effects it would produce, but he thought it was done somewhat in the feeling that Timour the Tartar must have experienced when he exclaimed—

"The trampled worm will turn, they tell me—stuff!"

That shows I havn't trampled him enough."

Mr. C. B. BELL, the hon. secretary and treasurer of the association, also responded. He felt a great compliment had been paid to him in his having been elected for the fourth time to the office he now filled. When he originally accepted that post, he took it with a determination to do his duty to the utmost of his ability, and he trusted he had succeeded in that endeavour. He felt confident that his efforts must have met with their appreciation by their having re-elected him three times successively to the office of their secretary and treasurer. With regard to the past year he could not allow it to be said the success of the Society's operations was wholly due to himself, for he must acknowledge the vast amount of assistance he had received from their past president, Mr. James Baynes, who, he regretted, was prevented from attending on this occasion in consequence of indisposition. To that gentleman the best thanks of the association were due for the efficient services he had rendered in opposing the Pharmacy Bill, introduced into the House of Lords by the Marquis of Ripon, and the House of Commons by Mr. Forster. He (the speaker) would never have been able to write such excellent letters as were sent to the members of Parliament had it not been for the valuable help of their friend, Mr. Baynes, to whom he now tendered his sincere and heartfelt thanks. As the chancellor of the Society's exchequer, he had had to make sundry calls upon his brethren in the trade, but these had always been freely responded to. He had not, however, been compelled to increase the income-tax, or to impose a tax on matches (laughter). Still, the financial position of the Hull Chemists' Association, he was proud to say, was as good as could be expected under the existing circumstances. Hull occupied an important position in respect of the action taken against the Pharmacy Bill, and a friend of his stated in a letter he had recently received, that Hull had fully earned its claim to the title of the "faithful city" (applause).

Mr. STANING responded on behalf of the committee, and expressed the pleasure it afforded him and his colleagues in doing all they could to further the interests of the Society.

Mr. GEORGE MYERS proposed the toast of "The Medical Profession," to which Mr. J. H. GIBSON responded. Among other remarks, he said the medical profession was under great obligation to this association for their opposition to the Pharmacy Bill, which would have had a prejudicial influence upon themselves as well as those in the trade. In conclusion, he said he was delighted that the association had succeeded in thwarting that movement which had been introduced by the Government (cheers).

The VICE-PRESIDENT next proposed the "Healths of the Lecturers," and in doing so he said this toast was one which greatly affected the interests of the drug trade, inasmuch as it had especial reference to the training of those who were placed under their care to instruct in the art and business of a chemist and druggist. They had been fortunate enough, through the instrumentality of this Society, to establish a course of lectures on pharmacy, chemistry, and Materia Medica; and, through the favour bestowed upon them by the curator of the Hull Botanic Gardens, they had

also had the privilege of a course of lectures on botany during the summer. No two gentlemen could have been selected better qualified to conduct these lectures than Dr. Rudd and Mr. Niven. He regretted that the number of pupils in the Materia Medica class was not so large during the past year as heretofore; but if those who did attend would ever bear in mind the maxim of Julius Caesar, "Incredibilia, industria et diligentia singulari," the day would come when they would bless the Hull Chemists' Association as having been the means of putting them on the road to prosperity.

The toast was acknowledged by Dr. RUDD and Mr. NIVEN in suitable terms, after which the "Healths of the Successful Competitors in the Examinations in Botany" was proposed by Mr. Niven, and acknowledged by Mr. Lambert; Mr. Bell next proposed "The Visitors," to which Mr. Flowerdew responded; "The Ladies" were toasted by Dr. Rudd, and Mr. Baynes, jun., was called on to acknowledge the compliment; Mr. Staning gave "The Press," coupling with it the name of Mr. H. J. Amphlett, of the *Hull Packet and Times*, and the toast was supported by Mr. C. B. Bell and Mr. J. H. Gibson. The toast having been duly acknowledged, others of a complimentary nature followed. During the evening a number of excellent songs and recitations were given, which tended much to enhance the enjoyment of those present, and the proceedings throughout were marked by the utmost harmony and good feeling.

LIVERPOOL.

LIVERPOOL CHEMISTS' ASSOCIATION.

THE second general meeting of the Society was held on October 26th, the President, Mr. E. DAVIES, F.C.S., in the chair. The following donations were announced:—Current numbers of the *Pharmaceutical Journal*, New York *Druggists' Circular*, "Journal of the Liverpool Polytechnic Society," and a reprint of "Notes on Drugs and Pharmaceutical Preparations," by Mr. J. Abraham.

Mr. THOMAS WILLIAMS read a paper "Upon the Manufacture of Alum and its Applications."

The PRESIDENT alluded to the recent formation of quinine artificially, and expressed some hope that quinine and morphine might also be so produced.

Mr. A. E. TANNER thought that all the alkaloids would at some future time, be artificially made.

In reply to a remark of Mr. TANNER's, Mr. WILLIAMS stated that pure alum would not affect the colour of vegetable infusions, such as infusion of roses.

A vote of thanks to Mr. Williams was proposed, and carried unanimously.

The third general meeting was held on November 9th, the President in the chair. The following donations were announced:—Current numbers of the *Pharmaceutical Journal*, and "Liverpool Medical and Surgical Reports," October, 1871, by Drs. Braidwood and Harrison.

The PRESIDENT called attention to "Formulae for Coloured Fires," by J. R. Bramschweiger, published in the *Journal of the Chemical Society* for October, which he had prepared and found good. They were free from obnoxious smells, and the danger of spontaneous combustion. The shellac employed, required to be only coarsely powdered.

Mr. A. H. MASON, F.C.S., said, that before the reading of the paper for the evening, he wished to call attention to the name of one intimately associated with the subject—he meant Dr. Richardson. This eminent man, who had done so much to relieve human suffering, was now labouring—he hoped with success—to prevent suffering to animals while being slaughtered.

Mr. ALFRED E. TANNER, then read a paper on "Nitrite of Amyl," of which we print an abstract.

Nitrite of amyl is a comparatively recent addition to our Materia Medica; no notice of its employment therapeutically in this country occurs previously to September, last year (1870), when Dr. Richardson gave some very interesting results of his experiments with nitrite of amyl, and quoted several cases of its successful employment in angina pectoris. Quite recently, Dr. Talfourd Jones has described the very great success he had met with in the employment of it in certain spasmodic diseases, besides the one previously mentioned, and in asthma and complaints of an allied character.

The earliest observed action on the system of this remarkable substance is due to F. Guthrie, in 1858, who specially observed that on inhaling its vapour, it caused flushing of the face and strong pulsation of the carotid arteries, with a much increased action of the heart; these effects led him to the supposition that it would be a valuable restorative in cases of drowning, suffocation, and suspended animation generally. Dr. Richardson also showed that the inhalation of its vapour was followed by an increase of the heart's action to a much greater extent than could be produced by any other known agent, also that the face and surface generally became deeply flushed; when the inhalation had been carried to a considerable extent, the breathing became excited, and breathlessness was produced, like that caused by violent exertion as running, rowing, etc. In no case was anaesthesia produced by it. Its use in angina pectoris was first advocated by Dr. Lauder Brunton. Dr. Talfourd Jones seems to have used it extensively; he states that it may be administered by the mouth, by inhalation, or by subcutaneous injection, but that the safest method is inhalation; he used five drops on a piece of lint and held close to the nostrils for ten or twenty seconds, or until acceleration of the pulse and flushing of the face commences. He also suggests its employment as an antidote to counteract the effects of an overdose of such medicines as chloral, ergot, etc. But his most important suggestion is its employment as a remedy for the collapse and cramps of cholera. No experiments in this direction appear yet to have been made, but from Dr. Talfourd Jones's very able and lucid arguments there appears every probability of its being the true remedy for this dreadfnl disease.

Nitrite of amyl, like most other substances of its class, was known to the chemist long before it was made use of in medicine; to M. Balard, in 1844, is due the discovery of this substance. It is an amber-coloured liquid, with a taste and smell reminding one something of ripe pears; nearly all the compounds of the amyl group possess something of this peculiar odour. Its formula is $C_5H_{11}NO_2$, and it is a corresponding compound to nitrite of ethyl, $C_2H_5NO_2$, which is contained in the spirit of nitrous ether of the Pharmacopœia. When pure and perfectly dry, nitrite of amyl has a boiling-point of 99° C.; when containing moisture, as it usually does, the boiling-point will be some few degrees lower, say about 96°, and this is the figure given by Balard. The presence of moisture is supposed to diminish the cohesion between the liquid and the glass, and so cause the ebullition to take place at a lower temperature, which is the case with almost all liquids,—their boiling-points being higher when boiled in glass vessels than when boiled in metallic ones, on account of the increased cohesion, owing to the extremely smooth surface which glass vessels present in comparison with metallic ones. The specific gravity of pure nitrite of amyl is .877; it is almost insoluble in water, but freely so in ordinary alcohol, ether, chloroform, benzole, etc.; it is itself a solvent of fats, oils and fatty acids; sulphur and phosphorus are but sparingly dissolved by it. Unlike the nitrite of ethyl, it does not appear to be decomposed or suffer any change by keeping. Nitrite of amyl is usually prepared by passing nitrous gas into purified amylic alcohol, at a temperature of 132° C., the boiling-point of the amylic alcohol. This process is a very tedious and unsatisfactory one. Five ounces and a-half of purified amylic alcohol requires from eight to nine hours before becoming completely saturated with the gas; in addition to which, the product is very impure and small in quantity; fractional distillation being necessary to get anything like a pure product. The impurities are for the most part ethyl-amylic ether, amylic aldehyd and very considerable quantities of hydrocyanic acid, all formed during the decomposition of the amyl alcohol by the nitrous gas. The nitrous gas is produced by reducing HNO_3 by means of starch in a glass-flask and conveying the vapours into the amylic alcohol heated to 132° C.

After describing several other processes for the production of nitrite of amyl, Mr. Tanner described one convenient for its preparation on a small scale, and of sufficient purity for medicinal use. He did not claim originality for it, as it was probable that many may have thought of it although not put it into practice. So long ago as July last year, while making spirit of nitrous ether by the Pharmacopœia process, the idea occurred that, with some modification, this might

be made a convenient one for the preparation of nitrite of amyl. A demand for the latter arising just then, it was put into practice. The process for spirit of nitrous ether, consists in distilling, at a certain temperature, a mixture of rectified spirit, sulphuric and nitric acids in certain proportions, and copper wire; the distillate consists mainly of a mixture of nitrite of ethyl and ethylic alcohol. Now, by substituting amylic alcohol for the rectified spirit in this process, you get nitrite of amyl among other products; Mr. Maisch who has recently tried this same process unsuccessfully, appears to have overlooked one fact, viz., that rectified spirit contains 16 per cent. of water, and that the amylic alcohol he used was nearly anhydrous. He states that the amylic alcohol, i.e. the purified substance, was mixed with sulphuric acid, the mixture introduced into a retort, together with some copper wire, and, after cooling, HNO_3 was added. In a very few moments the evolution of gas was observed, the liquid became hot without the external application of heat; and the reaction very rapidly increased to such a violence that the entire charge was lost, it being impossible to condense any of the vapours in a Liebig's condenser, or to retain much of the liquid forced over into the receiver. The author had repeated this experiment with exactly the same results; nearly the whole charge was forced over into the receiver, and, while there, the action again commenced, and increased to such violence that no doubt it would have forced itself back into the retort again if their mutual positions had been favourable. The whole house became filled with the vapour, and everyone who respired it became suddenly red in the face. Upon one assistant it had a very remarkable effect; it seemed to affect the muscles at the back part of the neck, and drew the head backwards, but this soon passed off. The reaction would probably be just as violent in making spirit of nitrous ether, if we used anhydrous alcohol instead of 84 per cent. as ordered. In preparing the nitrite of amyl by the process employed, it is of the utmost importance that the amylic alcohol be as pure as possible. Amylic alcohol is formed during the fermentation of potatoes, rye, barley and the marc of grapes; and when these are distilled it communicates a very pungent odour and taste to the spirits. It is considerably less volatile than either ordinary alcohol or water, having a boiling-point, when pure, of 132° C.; in consequence of this property, it accumulates in the last portions of the liquids that are distilled. Its name is derived from *amylum*, starch,—this being the most abundant constituent of potatoes.

It is of the utmost importance, in the preparation of nitrite of amyl, that the amylic alcohol be as pure as possible, for it is much easier to purify this than to purify the nitrite produced from it in its impure state. For this purpose, the best process is first to agitate the fusel oil with about an equal bulk of a strong solution of chloride of sodium; this usually reduces its bulk about 16 or 20 per cent., and also considerably lowers the specific gravity. This washed product is separated and introduced into a retort furnished with a thermometer; that portion of the distillate which passes over before the temperature reaches 125° C. consists mainly of the lower alcohols of this series, and whose boiling-points are below that of amylic alcohol, for the boiling-point rises in proportion as the compound is richer in carbon. The distillate collected between 125° C. and 140° C. is collected apart, and redistilled until it has a boiling-point near 132° C.; this may then be considered pure enough for our purpose. This is then introduced into a glass retort containing some copper wire, and furnished with a safety tube, and one-tenth its bulk of H_2SO_4 added. The same quantity of HNO_3 , diluted with an equal volume of water, is next put in, and a very gentle heat applied until the temperature reaches about 65° C., when the reaction will commence and proceed in a perfectly manageable manner, until a bulk about equal to double the quantity of HNO_3 added collects in the receiver, the temperature in the meantime rises to about 98° C. The reaction ceases very quickly, as in the case of spirit of nitrous ether. The temperature having fallen somewhat, another portion of HNO_3 , equal in bulk to the first, is added, and this process of successive additions of the acid continued until nearly the whole of the amylic alcohol is exhausted, which may be known by the dense red fumes evolved from the retort. The distilled product exceeds in bulk the amylic alcohol used,

and is the impure nitrite of amy1. This is washed with solution of NaHO to remove the HCN and other free acids present, and rectified over fused K_2CO_3 to get rid of moisture. The portion which distils between 95° C. and 100° C. is collected as nitrite of amy1, sufficiently pure for medicinal use.

It has several times been stated that nitrite of amy1 produces violent headache, and also coughing and irritation of the larynx; this may be due to its insufficient purification. The presence of HCN and undecomposed amylic alcohol would probably account for this; no such effect was produced on the speaker with the purified nitrite.

The PRESIDENT said that he felt a great interest in the subject, as many years back he had experimented with nitrite of amy1, and had experienced from it some of the effects mentioned by Mr. Tanner. He thought that Mr. Tanner's modesty scarcely allowed him to claim the merit due to his discovery of a much improved method of making this substance, as, in his opinion, he had shown sound chemical knowledge and great perseverance and skill.

Mr. MASON fully endorsed the remarks of the President, and said the method of manufacture employed by Mr. Tanner was a good suggestion; it was rather remarkable that the same idea had occurred to Mr. Maisch, of Philadelphia, and evidenced the more honour due to Mr. Tanner in that he had brought about the result anticipated. He agreed with Mr. Tanner that the boiling-point was a guarantee of purity, but thought it desirable that the boiling-point and specific gravity should be taken together.

Mr. TANNER said he discovered this method of manufacture some twelve months before Mr. Maisch published his paper.

Dr. SYMES, in proposing a vote of thanks, said the subject was a very desirable one to know about. He thought the boiling-point was a sufficient test of purity for medical purposes, and fully appreciated the value of Mr. Tanner's discovery, as he had prepared the nitrite himself by the old process, and it was important to know a process by which anyone with an ordinary amount of chemical knowledge might produce it. If pharmaceutical and chemical products were generally prepared instead of being purchased, much additional knowledge would be gained, and the scientific character of the pharmacist would become greatly elevated.

Mr. MASON seconded the vote of thanks, which was carried.

The fourth general meeting of the Society was held on November 23rd; the President, Mr. E. DAVIES, F.C.S., in the chair.

The following donations were announced:—Current numbers of the *Pharmaceutical Journal*; the "Journal of the Liverpool Polytechnic Society"; an "Abstract of the Proceedings of the Liverpool Geological Society, 1870-71"; the New York *Druggist's Circular*; and "A Metric System of Arithmetic."

Specimens of alum, illustrating Spence's process of manufacture, were presented to the museum by Mr. Williams.

Mr. ABRAHAM said that as the subject of tincture presses seemed to have considerable interest, he would mention his experience with respect to them. He had for eighteen years used an hydraulic press made by Mr. Coffey, and found that it remained as good as new. The diameter of the ram was $\frac{1}{16}$ inch, of the piston of the pump $\frac{7}{16}$ inch, the area would therefore be as thirty-six to one, and the lever would multiply the power twelve times. Altogether, the power of the hand to would be multiplied 423 times; and, supposing the pressure of the hand to be fifty pounds, the press would raise about ten tons. Messrs. Hayward, Tyler and Co. had introduced a compound press which was calculated to exert a pressure twice as great as this. But he did not find that the price of the hydraulic press had been reduced since he bought his. On the other hand, Mr. Staples had described a screw press, which was said to exert pressures as great as these. He did not question the possibility of this, but his preference for the hydraulic press was founded on the facility with which a moderate, gradually rising to a great, pressure could be applied. But if Mr. Staples' press would bear the assumed pressure, anyone who would look at the figures of it and of Messrs. Hayward's, as well as of other hydraulic presses, would see that the strength of the latter was greatly in excess of the necessities of the case.

In answer to observations by the Chairman and others,

Mr. ABRAHAM said that the form adopted by Messrs. Hayward involved a short ram which necessitated a screw over it, which added to the cost. The force, which all who had used the screw press knew to be required to reverse the movement, indicated the force which had to be overcome before any useful pressure could be applied by means of it. He did not think that the leakage ascribed to the hydraulic press interfered with its application as a tincture press, because whatever press was used the tincture would soon cease to flow unless the pressure was renewed. He thought the hydraulic press would invariably be preferred were the price the same, and hoped that cheaper forms might be devised.

Mr. A. H. MASON, F.C.S., showed a specimen of Cundurango.

Dr. CHARLES SYMES then read a paper, entitled "Observations on Practical Pharmacy."

A discussion on the subject of the paper followed, in which the PRESIDENT, Messrs. ABRAHAM, BLOOD, REDFORD, TANNER, and ARMSTRONG took part.

A vote of thanks to Dr. Symes for his interesting paper was proposed, and unanimously carried.

MANCHESTER.

MANCHESTER CHEMISTS' AND DRUGGISTS' ASSOCIATION.

THE third annual meeting of the above Association was held in the Memorial Hall, Albert-square, on Friday evening, October 13th, the President, Mr. W. S. BROWN, in the chair.

The Honorary Secretary, Mr. F. BADEN BENGEL, read the annual report, which showed a good financial position, but a falling off in the number of students attending the various classes.

The CHAIRMAN, in moving the adoption of the report, congratulated the members on the fact mentioned in the report, that their Association was the largest of a similar character in the provinces; at the same time it was a matter of regret to the Council that the Society was not much larger, the number of those connected with it was slightly smaller than last year, and very considerably less than in the previous one; he was grieved to have to state that the entries made for some of the classes at Owen's College had not been yet sufficient to ensure their commencement. These classes had been the hope and pride of those who had taken the trouble of organizing them; every endeavour had again been made to bring them under the notice of those for whom they had been intended; a special circular had been issued by the Secretary, but a general indifference seemed to prevail. He (Mr. Brown) hoped that the poison regulations question would not be again raised in Parliament; but, should it be, he believed that the same energy which Manchester and other places had displayed would again defeat it. It was the intention of the Council to make considerable additions to the library and museum; and should the income of the Association justify it, to take larger rooms for the accommodation of students. It would be a source of satisfaction to all connected with the Association to know that it had preserved its independence, and had neither received nor asked assistance from the funds of the Pharmaceutical Society, knowing how much those funds were needed by smaller and weaker associations.

The adoption of the report was seconded by Mr. VAREY PICKUP, and carried unanimously.

Then followed the election of officers. Mr. Brown, President; Messrs. Slugg and Wilkinson, Vice-Presidents; Mr. G. S. Woolley, Treasurer; and Mr. Benger, Secretary.

Mr. BENGEL remarked on the threatened collapse of some of the pharmaceutical classes at Owen's College. There were not found ten men to save the honour of the Association, by supporting the Pharmacy and Materia Medica courses.

Mr. L. SIEBOLD also commented on this. He believed that the main cause of the failure was the indifference of the students themselves, but in some cases the responsibility rested with the masters, who refused to give their apprentices the necessary time.

An ordinary monthly meeting was held in the Memorial

Hall, Albert-square, on Friday evening, November the 3rd, Mr. J. T. SLUGG, F R A.S., in the chair.

Mr. W. WILKINSON read a paper on "Some of the Difficulties met with in Dispensing." The difficulties we meet with in dispensing, chiefly occur in mixtures, pills, and ointments. With mixtures the trouble generally arises either from decomposition of some ingredient, or from non-amalgamation of the component parts, both these cases frequently arising from want of attention to the proper order of mixing: the latter are commonly of an emulsive character, consisting either of an alkali and oil with water or mucilage, and oil with water and other ingredients.

Here is one which I dare say many of you know pretty well:—

Pot. carb., 3ij.
Aq., 5vjss.

Solv et addc—

Syr. tolut., 5ss.
Ol. amygd., 3j.

This mixes pretty well if these directions are followed, but it does better if the salt of tartar is dissolved in an ounce or two of water, the syrup and oil added and well shaken, then the rest of the water.

Here is one with mucilage,—

Ol. ricini, 3ij.
Sacchari, 3ij.
Mucil. acac., 5ij.
Aquæ 5vj.
Ol. menth. pip. gtt., ij.

This is best mixed in a mortar; rub the oil of peppermint with the sugar, add the mucilage and a little water, then the oil, and when these are well mixed, the remainder of the water gradually; you will then have a nice milky-looking mixture, without any globules of oil floating about. Always take care that the mucilage and oil are well mixed in this kind of mixture before the water is added, or you will have drops of oil floating about; and should any tincture or spirit form part of the ingredients, mix it with a little of the water, and let it be added last, or you may possibly find the mixture "come unmixed," for gum is precipitated from its solution by spirit; and do not forget that the oil is to be added to the mucilage, *not* the mucilage to the oil.

Tr. benz. co., 3ij.
Mucil., 5ss.
Liq. morph., 3j.
Aq., 3ij.

In this case, if you add water to the tincture, the benzoin is all precipitated and rises to the surface and it is impossible to mix it, but just shake the tincture well with the mucilage, then add the water and you are all right.

Here is another,—

Bals. cop., 5ss.
Liq. pot., 3ij.
Sp. lav., 3ij.
Sp. nitr., 5iv.
Mucil., 3ij.

The best way of managing this is to reverse the usual order of things, mix the Liq. Pot. with the spirits, add the balsam, shake together, then add the mucilage; so that you see chemical theory and dispensing practice do not always agree.

Mixtures with tragacanth powder or mucilage used to be very troublesome to me until I learnt how to manage them; this is another instance of an entire upset of orthodox dispensing practice. The good old plan of using a mortar when powders form part of a mixture does not answer here, as every one who has tried it knows very well; but let the tincture or spirits, if there are any, be put into the bottle first, the tragacanth powder added, all shaken together, then the water added, and your mixture is made without any trouble. If there should be no spirit of any kind in the mixture, half fill the bottle with water, and the tragacanth powder, as the British Pharmacopœia directs, and you have no difficulty.

Vegetable powders, such as rhubarb or ipecacuanha, and compound powders, as Gregory, do not mix readily with water; in all these cases, the plan is to mix them first with

any tincture or spirit there may be. Mucilage or syrup is better than water. Bicarbonate of potash, or soda with citric acid, are often ordered together in mixtures, and the effervescence sometimes gives a good deal of trouble; but use an ounce or two of boiling water to dissolve the salts, the effervescence passes off directly, and you can finish your mixture at once.

The other day I had a mixture in which 3ij Potass Cit. and 3j Ferri et Quin Cit. were ordered with other ingredients; the potash happened to be alkaline, and precipitated quinine, which it ought not to have done, for the mixture should have been clear. It required about 15 grs. Acid Cit. to dissolve the quinine. Possibly some of you may have met with a similar mixture.

I once had a prescription which I had to make several times, but never succeeded in getting to mix, although I tried a different way each time. It was this:—

Glycérini, 3i.
Mist. acac. 5ss.
Ol. amygd. 3j.
Syr. aurant. 5ss.
Liq. calcis sac. 5ss.
Aq. ad. 5vij

And whichever way I mixed it, the Lic. Calc. and oil seemed to form a kind of insoluble soup, which separated immediately.

With regard to pills. You all know the trouble they give sometimes; either they are too hard or too soft, or they will not mix, or they crumble to pieces in rolling out, or go contrary in some way or other, and are very difficult to manage satisfactorily. Some of the most troublesome masses to deal with are those containing essential oil—peppermint, to my thinking, being particularly cantankerous, more especially when Ext. Rhei is present. P. Capsic. is another very unsociable article, and very often makes the mass crumble to pieces; but get a prescription with Ol. Menth. Pip., Capsic. and Ext. Rhei, and then you have a treat; indeed, it is hardly possible to give any general rule in these cases, for a good deal depends on the nature of the other ingredients; but if you find the mass crumbling or splitting to pieces on rolling out, it wants something to soften it a little in most cases.

Some time ago there was considerable discussion in the *Pharmaceutical Journal* as to the best mode of making creosote into pills, some recommending bees'-wax, and others something else. I find the best way is to rub the creosote, say ten or fifteen drops, with ten grains P. Sap, Cast., add the same quantity of light calcined magnesia, then sufficient liquorice powder. This forms a mass, which is sufficiently cohesive, and does not make the pills too large.

Ext. Rhei is a particularly nasty article in pills, for it is generally either as soft as treacle or as tough as leather. The best method is to powder the extract, and add to it a sufficient quantity of P. Rhei to make up the weight lost in drying (which also prevents the powdered extract from running together again), and with a few drops of decoction of aloes the pills are made without any trouble.

Camphor is sometimes very troublesome in pills, especially if there be much of it; it seems to make the pills go hard, and crumble in pieces; the best way to prevent this is to get the mass worked and rolled out as quickly as possible. Here is an example:—

Camph.,
Ext. cinchon.,
Zinc valer. 55 3j.

This, if done quickly, and the Ext. Bark is tolerably soft, makes up without much trouble; but if left at all, it becomes quite hard, and requires a considerable quantity of mucilage to make it up.

When a pill mass is not much too soft a little P. Tragac. is generally the best addition; but in cases where a large quantity of soft extract is ordered, this plan will not do. The only thing then is to leave out a portion of the extract, and use some dry powder in its place; for instance, we have often two or three grains Ext. Hyos. ordered with the same of blue pill. Nobody can make those into a satisfactory pill, supposing the extract to be in its usual state; but take about two parts of extract and one of P.

Hyosc., you then get a nice firm pill of the proper size. The same with Ext. Gent, and Sulph. Ferri, of which here is an example:—

Ferri sulph., gr. 12.
Ext. gent., gr. 48.
Ol. ciu., gtt. 12.
M. Ft. pil. xij.

I should just like to see the prescriber make that into pills without any alteration. The only way to make it into a decent pill is to leave out about half the essential oil, and use nearly as much powdered gentian as extract.

I shall not detain you long with ointments, but there are two or three cases I will just mention. When you have an extract, such as belladonna, to mix with lard or any other fat, if you attempt to mix them together direct, there is considerable difficulty in getting a smooth ointment; but if soften the extract first with a little hot water, and rub it smooth, then add the lard, or whatever it may be, you have no trouble.

Glycerine is now frequently prescribed in ointments, and is difficult to mix. Well, supposing it to be ordered with Ung. Zinc, as is often the case, do not use ready-made zinc ointment, but weigh the proper quantity of oxide, rub the glycerine with it, and then add the lard, you have then a good smooth ointment, which does not separate; of course, the same plan can be adopted with any other powder. If there be no powder melt the ointment, but do not let it get too hot, and beat the glycerine in and stir till cold, it then mixes much better; but still, if there be a large proportion of glycerine, it will separate after a time.

Many other instances might be given, but the above are a few that I have met with in my own dispensing, and I have confined my remarks to them, hoping to hear during the evening something of the experience of others.

During the discussion which followed the reading of the paper, Mr. SIEBOLD advocated the use of powdered gum, instead of Mist. Acaciæ, which was so liable to decomposition. Mr. Siebold also suggested the addition of a small quantity of hyposulphite of soda to Ung. Potassii Iodidi, to prevent its becoming discoloured; and, alluding to the difficulty which dispensers felt in amalgamating watery extracts with fat, he said some lard manufacturers were evidently possessed of the secret, as some specimens of bladder-lard he had examined yielded, when melted, only 75 per cent. of lard.

Several members recommended that dispensers should keep at hand small quantities of the common extracts, in which the evaporation had been carried further than is sufficient to produce the ordinary pasty extracts of pharmacy, and that these should be used in some of the special cases of difficulty described by Mr. Wilkinson.

Mr. BOSTOCK observed that some lard manufacturers used considerably more pearlash than could possibly be needed for cleaning their vessels; and he understood it was sometimes added to whiten inferior lard.

Mr. BENGEL said the addition of a small quantity of alkali also rendered the lard capable of taking up more water. Commercial lard was very seldom fit for pharmaceutical purposes.

Some discussion followed on the best method of preparing pure lard, some gentlemen recommending that the "flare" be bruised in a mortar, and washed in a stream of water, whilst others advised that it be melted at a low temperature (water bath) whilst very fresh, and without water.

A vote of thanks to Mr. Wilkinson closed the proceedings.

An ordinary monthly meeting was held on Friday evening, December 1st, Mr. G. S. WOOLLEY in the chair.

Professor WILLIAMSON, F.R.S., delivered a most instructive lecture on "The Natural History of the Mineral Substances used in Medicine." Having described the origin and formation of rocks, mineral veins, &c., the Professor, by the aid of a very beautiful collection of mineralogical specimens and diagrams, explained the chief sources of the various metals. There was a good attendance of associates, by whom the interesting nature of the lecture and the genial manner of the lecturer were evidently appreciated.

TENDERS for drugs, soda, &c., are advertised for to supply the Aberdeen County Prison for twelve months.



CHICAGO.

TO THE EDITOR OF THE "CHEMIST AND DRUGGIST."

SIR,—The pharmacists of Chicago have suffered severely by the great fire. Their brethren in other large cities of the United States are, however, helping them liberally, and with this and other support, and their own local efforts, those of the chemists of Chicago whose stores were destroyed—six wholesale and forty-six retail druggists—are being started again in business. But their Pharmaceutical College is still a heap of ashes. Its members propose to engage a building elsewhere; but they appeal to England for aid in replacing the library, apparatus, and museum specimens. In response, an influential committee, representing pharmacy throughout the kingdom, has been formed, and I am requested to ask you to help in urging the claims and needs of the institution.

The accompanying letters show the condition into which pharmacy and the pharmacists of Chicago have been thrown by the great conflagration. In a private letter Professor Ebert tells us that the loss in respect to the College is about £2,000. There is a partial insurance, but it is in Chicago offices, and therefore of little value. I enclose a list of the members of the committee. On their behalf, I shall be glad to receive here, at 17, Bloomsbury-square, London, books and specimens or apparatus for lecture-illustration, with subscriptions wherewith to purchase similar contributions. Cœques and post-office orders may be drawn in my name; the former being crossed "London and Westminster Bank," and the latter made payable at "High Holborn." I will undertake to forward all parcels, and have good grounds for stating that freightage will be reduced and customs' duties remitted. Lists of contributors will be published from time to time.

Yours faithfully,

JOHN ATTFIELD.

"CHICAGO COLLEGE OF PHARMACY,

"Chicago, October 31st, 1871.

"MY DEAR SIR,—The interest you have always shown in our College leads me to lay before you a statement of the loss we have sustained, thinking that in your extensive intercourse with British pharmacists you might be able to secure aid for us in replacing the College in its former position of usefulness.

"We would not make this application but for the fact that nearly all our active members have lost, like the College, all they possessed. In this really lies our weakness, as, otherwise, we could easily build it up again. All our library, cabinet of specimens, herbarium, apparatus and implements for instruction, book-cases, furniture, and many other articles of value, collected by years of effort, with the entire stock of the *Pharmacist*, are gone. The College of late was more prosperous than ever, and its influence was becoming a power for good in the elevation of Western pharmacy. Under such circumstances, we feel that others interested in the promotion of the progress of pharmacy may be induced to assist us in reviving the College, and would ask you to represent us wherever you find those who are interested in our endeavours. We do not lack willing hands nor strong hearts to do the work set before us, and with the assistance and sympathy of our friends, we trust the future of our beloved College may be far better than its past.

"Thanking you for your interest in our welfare,

"We remain, yours respectfully,

"ALBERT E. EBERT,

"Corr. Secy. Chicago College of Pharmacy, Corner of

"State and 12th Streets, Chicago, U.S.A.

"To Professor Attfield, London, England."

TO THE EDITOR OF THE "CHEMIST AND DRUGGIST."

SIR,—So many inquiries have reached me during the past week or two concerning pharmacists in Chicago, and the extent of the losses they have sustained in the late fearful conflagration, that I have thought I might send you the accompanying letter from Professor Ebert, believing that, although not written with any view for publication, it can hardly fail to interest your readers.

The appeal it contains on behalf of the College of Pharmacy can scarcely pass unheeded by English pharmacists. There can be little doubt that our publishers and publishing societies, if rightly approached, would willingly aid in the undertaking; there may be many duplicate or little-used pharmaceutical books in the libraries of your readers which would be cheerfully presented to make good the loss; and in other ways chemists and druggists will, doubtless, readily contribute.

When in Chicago, in September, I visited the rooms occupied by the College, and found very efficient arrangements for educational purposes, evening meetings, and the like, though necessarily, in a young institution, on a somewhat small scale; too small, I should suppose, for the number of students who appear to have entered at the beginning of the present ill-fated session.

I am, yours very truly,
HENRY B. BRADY.

Newcastle-on-Tyne, Nov. 18th, 1871.

P.S.—In the letter appended I have eliminated a few sentences of purely personal character.

"Chicago, Nov. 3rd, 1871.

"MY DEAR FRIEND,—Your most welcome and sympathetic letter has just come to hand, and was opened by our mutual and unfortunate friend Sargent, who is making (like many other of our colleagues whom the 'fire fiend' did not spare) my store his headquarters until his (which is being located on the corner of Wabash and 16th Streets) is finished. Mr. Sargent and myself were much pleased to hear from you, and of your safe arrival on the shores of *generous old England*, whom Chicago will hereafter only remember as a distant friend, extending to us the liberal assistance now pouring in at this hour of distress. We all thank her, and shall never forget this friendship of humanity when our troubles are over, and our ship again sails in calm water. I am safe as far as my personal safety and that of my business is concerned, but I may yet become a heavy loser should the insurance companies do no better than they appear to promise at present. The conflagration was fearful, and no pen has yet written an account that has done justice to the ravages of this terrible fire. Our colleagues who suffered (and they number from 40 to 50), like the balance of the populace, saved *really nothing*. All was consumed, there being no time left to attend to anything but personal safety. Among those you met at Mr. Buck's house only two escaped, Mr. Ehrman and myself. Messrs. Buck and Rayner lost both stores; they have again opened on the corner of State and 16th Streets; Mr. Whitfield has opened on the corner of State and 18th Streets, Mr. Sargent on the corner of Wabash and 16th, Mr. Parson on the corner of Wabash and 14th, Bliss and Sharp have removed to their store corner Wabash and 22nd. The College and its contents were burned the first night. We have *lost all*, with the whole stock of the *Pharmacist*. I have written a letter to our mutual friend Attfield, from whom I had a pleasant and sympathetic letter the day before yesterday, in which I enclose a personal appeal for the Chicago College in the way of contributions of specimens, books, etc. These we cannot purchase even if we had the money, which we do not ask. I know you will plead for our cause, and therefore thank you beforehand. The fire was checked on the corner of Harrison-street, in close vicinity of Ehrman's store. Just imagine for one moment the whole of the south division, from Ehrman's store north, and the whole of the north division as far as we drove that Saturday afternoon in September, *all gone*, excepting one solitary house. Nothing is left of those fine buildings which I was so proud in pointing out to you during our drive and our various rambles while you were here. I have so many friends who were rich and are to-day poor—nothing left them but their good names and credit (which is something) to start again in life.

But many are far advanced in life, and it seems so hard that they again must commence at the foot of the ladder. Take Mr. — as an example, one who has struggled bravely, and had just accomplished a long-desired object in getting the whole of the business into his own hands, to be swept away in one night, so that not one cent is left him, but, on the other hand, an embarrassment of about 8000 dollars debt. He was insured for 24,000 dollars, out of which he will realize about 5,000 to 6,000 dollars. Still he holds out bravely, and is putting up a temporary building on his new location. Bartlett lost nothing, excepting what he had at the College. Your friend, the writer, lost all his apparatus, instruments, books, specimens, and many highly cherished articles which he had been collecting for years, and had taken to the College for use in the just-commenced course of lectures. We had every prospect of a very successful session, having on the opening night some forty-three matriculants, and with the expectation of at least a class of fifty students. After the fire, for a week or so, we hoped that we might continue the course, and had made arrangements with the Chicago Medical College for the use of their specimens, apparatus, and rooms, but we were doomed to disappointment by the severe illness of Prof. Hambright, which resulted indirectly through the excitement of the fire. He was left very low and prostrated, and his physician ordered him to be removed from the city. This has put a stop to our proceedings for the present, still hoping, however, that, with the aid of our friends, we shall be well prepared to continue next winter. We have had much assistance sent us, 800 dollars from San Francisco, 17,000 dollars from New York City. Still, there is considerable want even of the necessities of life among those who have never been accustomed to asking relief. These are the really greatest sufferers, and it becomes our duty to seek them out and save them, if possible, from actual want. My own business is good, and I am kept quite busy, so that I can find but a few moments to spare at a time to attend to correspondence. The *Pharmacist* we shall have out, if possible, about the 25th of this month. We will have it published in Philadelphia if by that time we cannot find any printer in this city ready to do it. I am busy getting matter ready. . . . Remember me kindly to all inquiring friends, and believe me, as ever,

"Your friend,

"ALBERT C. EBERT."

"To HENRY B. BRADY, F.L.S.,

"Newcastle-on-Tyne.

THE CHICAGO COLLEGE FUND.

Raised in response to an appeal from the chemists of Chicago, to aid in replacing the books, specimens, and apparatus entirely destroyed by the great fire.

Committee—The President of the Pharmaceutical Society of Great Britain; the President of the British Pharmaceutical Conference; Alderman Sir Thomas Dakin, lately Lord Mayor, of London and Chairman of the Chicago General Relief Fund; Thomas Hyde Hills, Esq., Treasurer of the Pharmaceutical Society; Elias Bremridge, Esq., Secretary of the Pharmaceutical Society; F. Baden Benger, Esq., Provincial Secretary of the British Pharmaceutical Conference; Robert Bentley, Esq., F.L.S., Professor of Botany and Materia Medica to the Pharmaceutical Society; Dr. John Attfield, Professor of Practical Chemistry in the School of Pharmacy; the President of the North British Branch of the Pharmaceutical Society, Edinburgh; John Mackay, Esq., Secretary of the North British Branch of the Pharmaceutical Society, Edinburgh; C. R. C. Tichborne, Esq., Chemist to the Apothecaries Hall of Ireland, Dublin; the President of the Midland Counties Chemists' Association, Birmingham; the President of the Bradford Chemists' Association; the President of the Bristol Pharmaceutical Association; the President of the Colchester Association of Chemists and Druggists; the President of the Glasgow Chemists' and Druggists' Association; the President of the Halifax and District Chemists' and Druggists' Association; the President of the Hull Chemists' Association; the President of the Leeds Chemists' Association; the President of the Liverpool Chemists' Association; the President of the Manchester Chemists' and Druggists' Association; the President of the North Staffordshire Chemists' Association;

the President of the Nottingham and Notts Chemists' Association; the President of the Sheffield Pharmaceutical and Chemical Association; the President of the Sunderland Chemists' Association; the President of the Taunton Chemists' Association; the Secretary of the Exeter Pharmaceutical Society; the Chairman of a sub-committee of English Students; S. Chapman Betty, Esq., London; A. Bottle, Esq., Dover; Michael Carteighe, Esq., London; John T. Davenport, Esq., London; William Edwards, Esq., London; T. B. Groves, Esq., Weymouth; Daniel Hanbury, Esq., F.R.S., London; Robert Howden, Esq., London; Joseph Ince, Esq., London; T. N. R. Morson, Esq., London; G. W. Sandford, Esq., London; William Albert Sanger, Esq.; Edward Smith, Esq., Torquay; Francis Sutton, Esq., Norwich; John Williams, Esq., London; Battley and Watts, London; Barron, Squire, and Co., London; Davey, Yates, and Routledge, London; Evans, Lescher, and Evans, London; Hearon, Squire, and Francis, London; Herrings and Co., London; Hodgkinsons, Stead, and Treacher, London; Horner and Sons, London; Savory and Moore, London.

Executive Sub-Committee.—Thomas Hyde Hills, Michael Carteighe, John Attfield.

Parcels of books, specimens of chemicals, or articles of the *Materia Medica*, apparatus, and subscriptions (the whole of which will be expended by the Committee in the purchase of similar contributions), may be sent to Professor Attfield, 17, Bloomsbury-square, London, W.C. Cheques, crossed "London and Westminster Bank," and Post-office Orders, drawn for "High Holborn," may be made payable to John Attfield.

CONTRIBUTORS AND SUBSCRIBERS.

[Duplicates of books or lecture-specimens will be dealt with by the Committee, at their discretion, for the general benefit of the Fund, unless instructions to the contrary are forwarded with the parcels. Gentlemen are invited to inquire of Professor Attfield, 17, Bloomsbury-square, London, W.C., as to whether or not copies of the books, etc., which they propose to give have already been contributed.]

	£ s. d.		£ s. d.
Robert Howden ..	5 5 0	Barnard S. Proctor ..	1 1 0
Daniel Hanbury, F.R.S..	5 0 0	Marshall Heanley ..	1 0 0
Hodgkinsons, Stead, and Treacher ..	10 10 0	Professor Bentey ..	5 5 0
Barron, Squire, and Co. ..	10 10 0	Professor Attfield ..	5 5 0
T. H. Hills ..	5 5 0	Elias Bremridge ..	1 1 0
John Bell and Co. ..	5 5 0	Meggeson and Co. ..	2 2 0
In Memory of Jacob Bell..	5 5 0	Langton Harker and Stagg ..	1 1 0
Dinneford and Co. ..	5 5 0	Burgoyne, Burbidges, & Co. ..	1 1 0
G. W. Sandford ..	2 2 0	Hopkin and Williams ..	5 5 0
R. Reynolds ..	2 2 0	W. F. Sparrow ..	0 10 0
A. F. Haselden ..	2 2 0	Hearon, Squire, & Francis ..	10 10 0
Robert Hampson ..	1 1 0	Herrings and Co. ..	5 5 0
Mrs. Hampson ..	0 10 6	Davy, Yates, & Routledge ..	10 10 0

STUDENTS.

	s. d.		s. d.
Mr. Minehin ..	2 6	A Friend ..	1 0
Mr. Crundell ..	5 0	Mr. Rammell ..	2 6
Mr. Fentiman ..	10 0	Mr. Hall ..	3 6
T. L. ..	2 6	Mr. Canner ..	2 6
T. H. ..	2 6	Mr. Midgley ..	2 6
Mr. Gould ..	2 6	Mr. Cortis ..	2 6
Mr. Ashworth ..	2 6	Mr. Ragg ..	2 6
Mr. Russell ..	2 6	Mr. Bishop ..	5 0
Mr. Fairman ..	5 0	A Friend ..	1 0
Mr. Cooper ..	5 0	Mr. Crisp ..	2 6
Mr. Ashwell ..	5 0	Mr. Badcock ..	2 6
Mr. E. Tebbutt ..	2 6	Mr. Shenstone ..	5 0
Mr. Thring ..	5 0	Mr. Davies ..	5 0
Mr. Brewster ..	2 6	Mr. Kempster ..	2 6
Mr. Camplin ..	5 0	Mr. Edmonds ..	3 0
Mr. Moss ..	10 6	A Friend ..	1 0
A Friend ..	1 0	Mr. Buswell ..	3 0
Mr. Smith ..	2 6	Mr. Sherburn ..	2 6
Mr. Houghton ..	5 0	Mr. Hillier ..	2 6
E. ..	1 0	Mr. Hanbury ..	5 0
Mr. Trist ..	2 6	Also Books from	
Mr. Cottam ..	2 6	Mr. Smithard, Brande's "Chemistry."	
Mr. Townley ..	2 6	Mr. Moss, Royle's "Materia Medica."	
A Friend ..	1 0		
Mr. Neakes ..	2 6		

Pharmaceutical Society.—A complete set of the "Pharmaceutical Journal and General Indexes," half bound.

Joseph Ince, London.—Bischof's "Chemical and Physical Geology," 3 vols.; Lehmann's "Physiological Chemistry,"

3 vols.; Gmelin's "Chemistry," 17 vols.; Tyndal on "Heat;" "Chemical Memoirs" (Cavendish Society); Henry's "Life of Dalton;" Laurent's "Chemical Method;" Guibourt's "Histoire des Drogues Simples," deux tomes; Mérat et de Lens,—"Dictionnaire de Matière Médicale," six tomes; "Codex, Pharmacopée Française;" Daniell's "Chemical Philosophy;" Richard, "Éléments de Botanique;" Orfila, "Éléments de Chimie," deux tomes; Lindley's "Botany;" Saint-Hilaire, "Animaux Utiles;" Ollendorff's "Method of Learning German," 2 parts; Ollendorff's "Key to German Exercises;" Ollendorff's "Method of Learning French;" Ollendorff's "Key to French Exercises;" Gubler, "Commentaires Thérapeutiques;" Tiarks's "German Grammar;" Tiarks's "German Exercises;" "Key to Tiarks's German Exercises;" Parnell's "Chemical Analysis;" Fresenius's "Chemical Analysis;" Bacon's "Essays and Historical Works."

Ernest Agnew, London.—An incomplete Herbarium.

T. N. R. Morson, London.—Specimens of Chemicals.

Thomas Greenish, London.—Beale's "How to Work with the Microscope;" Williamson's "Chemistry for Students."

Thomas Hyde Hills, London.—Two Portraits of Jacob Bell; Two Portraits of William Allen; Two Portraits of Jonathan Pereira; Bell's "Historical Sketch of Pharmacy."

W. S. Stables, Scarborough.—Bowman's "Medical Chemistry;" Kay-Shuttleworth's "Modern Chemistry."

Professor Attfield.—A complete set of the "Transactions" of the British Pharmaceutical Conference; The "Year-book of Pharmacy, 1870;" The "Year-book of Pharmacy, 1871;" The "British Pharmacopoeia, 1867;" Pharmacopoeia of the United States, 1860."

THE TRADING CLASSES.

TO THE EDITOR OF THE "CHEMIST AND DRUGGIST."

SIR,—In your edition of the 15th of November you allude to the friendless position of the middle classes. It may not be without its use to state their grievances:—1st. They are over-rented. 2nd. They are over-taxed. 3rd. They are over-worked. These are their substantial grievances. But there is a sentimental one besides, and that is that they are not duly respected either by those above or those below them.

The remedy is they must unite, not as separate trades, but all trades in defence of their position, and for obtaining the rights that belong to them. There are three working-classes dependent upon each other—the professional, the distributive, and the productive. There are three other classes who are a burden upon the above—the luxurious, the criminal, and the imbecile. The last are to be pitied, but the position of the other two classes requires modifying to the relief of all the working classes.

The first thing to be done is the abolition of the income tax (now a mere instrument of extortion), to be replaced by a revised land tax, the value of land having increased everywhere through the energies of the middle classes, while it bears its fair share of the expenses of Government nowhere.

The next right the middle classes have to claim is a tenant right to protect them against extortion and undue molestation, also the landlord should have no undue preference as a creditor. As regards the marquis, who demanded of his tradesmen that they should supply him with goods at co-operative prices, his demand was out of all the ordinary rules of business.

First, he should have contributed his share of the capital required for carrying on his tradesmen's businesses. 2ndly. He should have lowered their rents to the scale of the cheap back premises generally occupied as co-operative stores. 3rdly. He should have secured them the prompt payment and immunity from bad debts enjoyed by co-operative societies. But certain tradesmen are already adopting the sensible plan of taking cheap premises where they can afford to sell for smaller profits and obtain a good connection by means of printed advertisements.

I am, Sir,

Yours obediently,

Liverpool.

V.

EARLY CLOSING.

TO THE EDITOR OF THE "CHEMIST AND DRUGGIST."

SIR,—I have read with much satisfaction one or two letters in the *Manchester Guardian* from the pen of Mr. Bateman, of that city, on the above subject, which letters I consider most liberal in their tone both towards principals and assistants. It may seem unnecessary to add to what has been so well said by Mr. Bateman, but if the unreasonable and unnecessarily long hours of chemists are to be curtailed, the subject must be frequently brought forward. I am brought in contact daily with chemists in different parts of England; consequently, I have opportunities of hearing this and other questions affecting the interests of the trade discussed. I will therefore endeavour to point out what appears to me to be the general feeling on this subject; I believe a vast number of principals would hail with delight the boon of an additional hour or two which they might spend with their families relieved from the cares of business, but here difficulties arise in varied forms. First, it appears to me greater unity is required amongst chemists. Let them cultivate the feeling that they have a common interest in each other's welfare, and not that they are established simply to oppose each other. There is needed a spirit of what I will designate manly and liberal independence in opposition to that spirit of selfish independence which prevails in some quarters. The lack of the former manifests itself when A is wishful to close his shop (say) at eight, but B will keep open until half-past; A is therefore dreadfully jealous of the few shillings additional B may take, which in many cases I believe scarcely pays for the additional gas consumed. In almost every town there will be some needy one who will keep open his shop as long as there is any customer, real or imaginary, in the streets. The presence of the lower independent spirit manifests itself in standing aloof in all matters conducive to the prosperity of the trade. The most effectual remedy that can be employed to remove these barriers is the public influence, and more especially the influence of the ladies. I am no advocate for woman's suffrage, but I almost wish there was some corporate body of ladies approachable by deputation that this question might be brought before them. We all know that if they espouse a cause success is almost certain. The ladies are ever foremost in furthering all benevolent works, and if they would simply exercise a little kind consideration by sending their prescriptions or other commands to their chemists during the afternoon instead of deferring them until the evening, they would render it practicable for every chemist to close his establishment at seven o'clock every evening.

I remain, Sir,

Yours respectfully,

A COMMERCIAL TRAVELLER.

Trade Memoranda.

MR. R. JONES OWEN, of the Leytonstone Subscription Dispensary, has purchased the business formerly carried on by Mr. H. A. Morgan, at Stratford New Town.

MR. MANDLEY, late of 151, High-street, Stourbridge, Worcestershire, has relinquished his business in favour of Mr. S. P. Clark, of Wooton-under-Edge, Gloucestershire.

The guardians of the Brighton Union are open to receive tenders for the supply of drugs for the quarter commencing December 25, 1871; particulars of the said tenders to be sent in on the 18th inst.

We note that the surgical instrument and respirator business of the late Mr. E. Collier, of 28, Myddleton-street, Clerkenwell, will be carried on by his widow, who retains the services of the same efficient staff as that engaged herebefore.

Our readers who sell photographs, and who care to seize the moment as it flies, should get the Stereoscopic Company's latest publications, the Tichborne jury, and as a companion to it, a representation of the same jury sixty years to come. In the first we have the eleven gentlemen who, as a penalty for living in a free country, have been called upon to sacrifice the remainder of their lives over a family quarrel. The second picture is from a design by George Cruickshank, which shows one jurymen only left (date 1830), and he with patriarchal beard and bent form is bravely struggling to catch through an ear-trumpet the confused remembrances of some of the witnesses yet to come, or it may be he is in the last fortnight of one of the barrister's addresses. The picture is likely to be saleable any time this century.

Homœopathy does not seem to prosper in Norwich. Within a few years no less than two homœopathic chemists have succumbed through the force of circumstances; now, as will be seen by the *Gazette*, a third has "compounded." The *Norwich Argus*, with that grim satire for which it is celebrated, thus alludes to the bankrupt's original mode of treating the cattle plague, which was heralded with a great flourish of trumpets, but which proved another awful failure: "Eighty-five per cent. cattle plague, we regret to say, having come to grief, has found his way into the atmosphere of the bankruptcy court. As many friends are anxious respecting the dividend dose, we may as well, in the interest of candour, assure them that the dividend will be perfectly in keeping with the profession of the unfortunate, namely, it will be a homœopathic one. We offer the blue-and-white chemist our sincere condolence, since we believe he is a very industrious and worthy personage." Talking of bankruptcy, it has been noticed that there have been an unusual number of chemists gazetted lately. Within the past two or three months no less than four chemists in Brighton alone have either compounded with their creditors or become bankrupts.

If anything were wanted to prove the flourishing condition of the match trade, such proof would be given by the examination of an almanack and diary presented to us by Messrs. Bryant and May. We are not told how many grosses of matches one must buy from them to be entitled to this present, but it would take a great many to pay for the cost of the book out of the profit on them. There are in it maps of London, Liverpool, Manchester, and Edinburgh, and there is a collection of coloured representations of the various boxes of matches sent out by the firm. The manner in which these are drawn and coloured is quite astonishing. Among them we notice the "Chancellor" matches, on each box of which is a *fac-simile* of the suggested match-box, with its classical pun *ex luce lucellum*. The "Chancellor" is described as a match "manufactured without sulphur," which at least shows that Messrs. Bryant and May retain no malice towards their conquered tyrant.



J. J. (Tipton).—Pereira's "Materia Medica" has a deservedly great reputation, but it is rather dear, and our correspondent will probably find Royle's work answer his purpose admirably.

E. P. S.—Probably rinsing the bare skin in a solution of corrosive sublimate would prove sufficiently antiseptic and preservative. We are unable to give you information on the other point. You might find an advertisement bring you results.

Clapton.—We cannot pretend to have a better knowledge of the rules of the Pharmaceutical Society than the Secretary. Your having passed the Modified entitles you to become an Associate of the Society, with privileges of membership, upon payment of the regular subscription. Passing the Preliminary and Minor Examinations constitutes a legal right to go into business.

S. E. B. (South Shields).—The following will be found an efficient coating for pills:—

R. *Æther*, 100 parts.
Balsam of tolu, 10 parts.
Colophonium, 1 part.
Absolute alcohol, 10 parts.
Macerate till the resin is dissolved.

(See Mr. Haselden's remarks concerning this in another part of this journal.)

Sugar-coated pills may be made by first rolling them in a mortar in the above aetheral solution, and then transferring to a sheet of writing paper with the sides bent upwards, shaking being continued till they are perfectly dry. Then to a small quantity of the saccharated albumen (see recipe) add a few drops of water, at the same time beating for a short while, so that a thick paste will be formed. Into this mass the pills are stirred, and, when moistened on all sides, quickly poured into a wooden pill-box, which has been previously filled about one-third with the finest powdered sugar obtainable, and immediately shaken, or rather rolled, in a lively way and with great force, separating from time to time those cohering. When no more sugar will adhere, they are dried over a gentle fire, taking care not to bring them too near the stove, lest they should crack. Shaking, of course, must be continued till dryness is effected.

Albumen c. Saccharo.—Take the white of an egg, and in an evaporating dish beat with it as much powdered sugar, passed through a very fine sieve, as will make rather a thick fluid. Then place it in a water-bath and evaporate to dryness, stirring constantly, that no sugar may be deposited. Pulverize, and set aside for further use.

A CORRESPONDENT at Penzance sends us a bundle of specimens of pharmaceutical requirements in Cornwall. We select a few, which require the aid of lithography, however, to represent them properly:—

Won hounce of bolsom pevey.
To hounces of hars kin scervey dropes [Liq. Potassæ].
To penerd of niter.

½d. of Tabbylac for a shoomaker [Turmeric].

One ounce of Aspar allice [Sarsaparilla].
One ounce of root rickles [Liquorice].

3 penard of Nova Scotia [?] for a plaister.

Pleas send 3 2d. boxes of parmasita oint Mend.

Exchange Column.

REVISED TERMS.—Announcements are inserted in this column at the rate of one halfpenny per word, on condition that name and address are added. Name and address to be paid for. Price in figures counts as one word.

If name and address are not included, one penny per word must be paid. A number will then be attached to the advertisement by the publisher of the CHEMIST AND DRUGGIST, and all correspondence relating to it must be addressed to "The Publisher of the CHEMIST AND DRUGGIST, Colonial Buildings, Cannon-street, London, E.C.," the envelope to be endorsed also with the number. The publisher will transmit the correspondence to the advertiser, and with that his share in the transaction will cease.

FOR DISPOSAL.

Chemical Books. "Chemieus," 239, Polygon, N.W.

Three pounds Potass. Iodid. First make. Money offer wanted.
Adress, Cowley, Peas Hill Rise, Nottingham.

A Dr. Normanby's gas furnace and another, 8s., or an equivalent. Steel, chemist, Liverpool-road, Islington.

First 3 vols. Muspratt's "Chemistry," also Squire's "Companion." 3rd edition. Cheap. Offers requested. 20/456.

Cigar and Upright Case combined, cost £8, nearly new. Sketch and particulars on application. Walter Stead, Westgate, Heckmondwike.

A 15 in. Copper Lamp, with 3 ruby flat lenses and bracket, a large Window Casement, and various Show Carboys; also a few Show Jars, slightly damaged, to be sold, a bargain. Davies, Chemist, Swansea.

Owen's "Compendium," Receipts and Processes, Pharmacy, Chemistry, Confectionery, Perfumery, Cosmetics, Homoeopathy, Essences, Wines, latest Discoveries and Improvements. New impression, 26 stamps. "Invaluable." Owen, Chemist, Leytonstone.

"Pharmaceutical Journals" complete, years 1846-7-8-9, unbound. 40 numbers incomplete, 1842-5, 1850-1-2-3. The "Chemist," 36 numbers. Copper Still, 3 gallon, complete, nearly as good as new. Six Drum Sieves, brass and horsehair, second-hand, fair condition, cash offers wanted. E. Thompson, chemist, Dover.

Show-ease for Tooth and Nail Brushes, dimensions, 30 by 18 by 6½ inches, heavy plate-glass lid, twelve partitions for toothbrushes, one long ditto for nail brushes, three drawers, price 40s. Also 6 ft. Buckle's Leech Conservatory, lid cracked, price 2s. 6d. Open to offers in barter. Cubitt and Son, 17, Market-place, Norwich.

At half-price. 18 Whitney's Carminative. 3 Woodhouse's Ginger. 12 Bewley's Lozenges. 3 Yoland's Specific. 2 Lignam's Lotion. 13 Napier's Neurotonic Pills. 3 Norburn's Solvent. 5 Simeo's Pills. 8 Jephson's Wafers. 2 Jones's Gout Mixture. 5 Harvey's Pills. 5 Henry's Magic Pills. 4 Hallam's Pills. 3 Holland's Sprue. 2 Somerset Pile Remedy. 2 Griffins's Tincture. Kitson, Chemist, Worcester.

WANTED.

Latest edition "Seleeta è Præscriptis." 13/456.

Latin Translation of Pharmacopœia, 1851. Baker, Romsey.

A Copying Press. State price and order. Mr. Borthwick, Kelso.

Carrageen Moss, in large quantities. State price per cwt. delivered in London. 7/456.

Large Composition Mortar. Water-bath. Stater's "Commercial Analysis." Cole, chemist, Stoke Newington.

Gasometer with Core for Nitrous Oxide Gas, and 100-gall. Liquid Gas Bottle, must be in perfect order. Wm. Shillinglaw, dentist, Birkenhead.

P. B. 1867. Root-cutter. Beasley's "Formulary," last. Counter Scales. Small Glass Case. Large Iron Mortar. Two Small Globes. 15/456.

GAZETTE.

BANKRUPTS.

BROWN, C. M., chemist, Witney.
DALE, WILLIAM, chemist, Weston-super-Mare.
GILLIES, ELIZABETH, physician, Halifax.
RAPIER, A. T., chemist, Norwich.

DECLARATION OF DIVIDENDS.

JEWELL, THOMAS WILLIAM, Harwich, Essex, surgeon, sixth dividend of 2s. 6½d., on Monday, Dec. 18, at Mr. Paget's, 22, Basinghall-street, City.
NAPPER, THOMAS, late of Littlehampton, surgeon, second dividend of 7s. 3½d., on Monday, Dec. 18, at Mr. Peter Paget's, 22, Basinghall-street, City.

PARTNERSHIPS DISSOLVED.

BOALER, WILLIAM, and JONES, WILLIAM, chemists, Birmingham.
BOWEN, J., BOWEN, E., and BOWEN, H., manufacturers of vitriol. Morriston, Llangelech, Glamorganshire.
HOPWOOD, H., and LOFT, W. G., drapers, Great Grimsby.
HORTON, G. E., and TANNER, R. C., surgeons, Dudley.
SCHWANN, F., and MEHL, W., exporters of drugs, Market-lane, City.
TREND, H. G., and STEVENS, G. J. B., surgeons and apothecaries, Southgate-road.
TYLER, E. A., and B. M. SMITH, surgeons, High-street, Manchester-square,

Varia.

MR. WILSON, chemist, Port Dennison, N.S.W., reports the following document as having been received by him, "please sur if you wold hif you would send me up some stofe for a child aboit to years old she is verrey bad and had to cuvelesons fits and she is cutting her duble teeth it tis whate you call the dum fever."

The *Chloralum Review* tells the following story with an evidently diabolical relish. At a recent inquest in a provincial town, held on the body of a child, accidentally poisoned by taking one of our popular disinfectants in mistake for some more palatable drink, the foreman of the jury accompanied the verdict with this recommendation—"Please, sir, the jury is of opinion that the public should be warned of the dangerous nature of this diabolic acid!"

At a dinner of the American Academy of Dental Science held recently at Boston, Mr. Charles H. Frothingham, being present as an invited guest, said that he did not think that dentists as a body were unpatriotic, but he was surprised that no one had proposed the customary toast to the President of the United States, and in order they might not suffer in the minds of any by reason of this omission, he gave them, and thought there was especial appropriateness in so doing—"The health of the present Presi-Dent of the United States, Gen. Ulysses S. Grant, who from his numerous Dent-al connections and his great admiration for the family—as evinced by his marrying a Dent and appointing so many Dents to office—may be fairly considered the most distinguished Dentist in the land." The health of Gen. Grant, "the great dentist," was then drunk amid much applause.



DURING the past month a fair and uniform amount of business has been done in drugs, and the market tendency on the whole has been upwards. Of essential oils an active demand has prevailed for aniseed, and an appreciable augmentation in price must be reported. Good business has been done at 13s. 9d., and for arrival we hear that 13s. 3d. has been paid for about 30 eases.

Cassia has also met with increased attention, and is 18s. 9d. per lb. dearer than last quotation. Recent sales of about 80 cases show pries obtained to range from 5s. 3d. to 5s. 9d. At last moment the price is firm at 6s.

The stocks of cinnamon oil are very low, and for good qualities extreme prices are obtainable. Two cases of common, half heavy, were bought in at last sales, and sold privately at 2s. 8d. per oz. Good supplies of citronella have been taken at former moderate rates. Lemon is very dear, and super quality is worth 15s. From the report of our Consul at Messina, it appears that the disease of the lemon-tree continues its ravages, and nothing has yet been found to check it. The lemons thus tainted yield an inferior essence; hence super qualities are scarce. Makers at Messina we hear are holding stocks for still more remunerative prices.

OPIUM.—The extensive stocks in this country are held with confidence, and no change of importance has occurred in price. It now seems certain that the Indian crop will be a partial failure, and this is accounted for by the "blight" which has attacked the poppy plant, especially in the Behar, and Benares agencies. The original estimation of the harvest was 55,724 chests; but through the adverse influence

referred to, the yield, it is computed, will not exceed 41,000 chests.

A stronger demand has appeared for Cochinchin, and Teneriffe black at last sales fetched an advance of 1d. per lb. and silver $\frac{1}{2}$ d. Cantharides still advance. At auction on the 7th, 7 cases Russian were bought in at 8s. 3d., and 5 cases of China at 6s. It is confidently asserted that 10s. will be the ultimate price. Camphor.—China has shown considerable activity, good business having been done but recently at prices, ranging from 77s. 6d. to 80s. The market is now much quieter, and 77s. 6d. is the utmost price obtainable.

BARKS.—Cinchonas fully maintain previous value. Cundurango, which was lately described by an enthusiastic American writer as "the brightest jewel in the crown of Ecuador," is decidedly losing its lustre here. This much vaunted remedy for cancer cannot now command a bid of 5s. per lb., although but a short time since 40s. was paid for a parcel at public auction, and it has been disposed of in America at the extravagant price of 25 dols. per lb. Three bales were offered at the London sales on the 7th, and were bought in, amid derisive remarks, at 5s. per lb. How have the mighty fallen!

CUBEBS, after having been neglected, show unmistakable signs of animation, and at recent sales 287 of 347 bags offered, were taken at the advanced rates of 25s. to 30s. 6d. for fair to good sound.

GRAINS OF PARADISE are still in active demand at very high prices, being worth nearly double as much as they were this time last year.

SPICES.—Pepper is easier, and the same may be said of Mace. There is but little Cassia Lignea offering, and full rates are required for it. At the quarterly sales of Cinnamon, on the 27th ult., the good and fine qualities sold steadily at previous quotations, whilst for the commoner sorts there was more competition, and these descriptions sold at a slight advance. In Nutmegs there is no change to notice, but recent heavy arrivals of Mace have depressed the market, and sales can only be effected on lower terms.

CHEMICALS.—The business done since our last report has been of a brisk and satisfactory character, and the total shipments of the year will compare most favourably with those of 1870. Iodine maintains its high value, and various reasons are assigned as an explanation. It is known to be largely used in some form or other as a mordant in the manufacture of certain green dyes just at present in great use. Very large quantities are also absorbed in the manufacture of Potassium Iodide, and the supply, through failure of the kelp fisheries, is insufficient to meet the demand. Alum is in much request, and is quite 20s. per ton dearer. Bleaching Powder rather firmer, and Nitrate of Soda steady at 16s. 9d. Sulphate of Copper has advanced in price, conjointly with great rise in the metal; but the high rate of 28s. per ewt. does not deter buyers. Sulphate of Ammonia is not abundant, and sellers are probably waiting for still better pries. Refined Borax in good demand, and prices advanced to 100s. per ewt. Quinines continue firm at 7s. 8d. for Pelletier's, and 7s. 9d. for Howard's.

DRYSALTERIES.—For Gambier an active demand has prevailed, and present price is firm at 19s. Shellac: The recent activity has subsided, and prices of garnet and native kinds are 2s. 6d. per cwt. lower. Other staples without any changes of moment.

OILS.—Linseed is easier to buy, and rape has suffered a depression, English brown on the spot having changed hands as low as £43 10s. Cotton has been in fair request, and the market for olive has remained firm, with sales of Malaga at £52, Lisbon and Zante at £51, Tunis at £50 to £50 15s., and a limited quantity of Mogador at £49. As regards fish oils, sperm has been obtainable at £90 to £91, but without much business passing. Common oils remain firm. Pale Southern, £36 to £37; pale seal, £36 10s.; pale shark, £35. Cod has been ruling quiet at £34, but within the last day or two has advanced to £35 10s., an active demand prevailing.

TURPENTINE.—The tone of this market has been firmer, American spirits being now worth 48s. 6d., while for French 47s. 6d. has been paid.

